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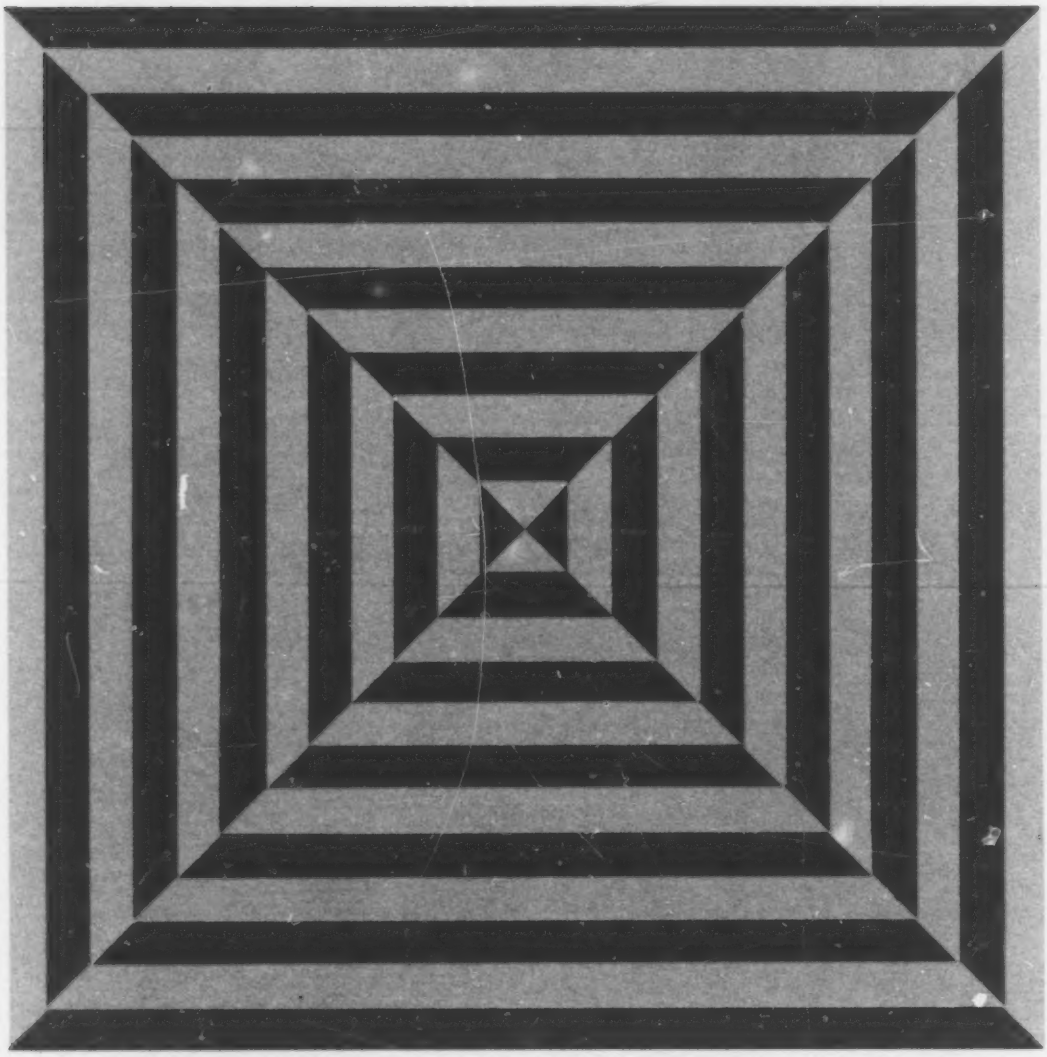
AN ASSESSMENT OF COLLEGE STUDENT HOUSING AND PHYSICAL PLANT

Charles J. Andersen and Frank J. Atelsek



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An Assessment of College Student Housing and Physical Plant

Charles J. Andersen

Frank J. Atelsek

Higher Education Panel Reports

Number 55 October 1982

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As in every case, our major debt of gratitude and thanks is owed to our campus representatives who helped coordinate the gathering of data from a variety of campus sources and to the college and university staff members who provided the information that is summarized here.

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HIGHLIGHTS

- Two-thirds (68 percent) of the nation's institutions of higher education provided residential facilities for students in fall 1980: 98 percent of the universities, 87 percent of the four-year colleges, and 36 percent of the two-year colleges.
- Private institutions placed a larger proportion (53 percent) of their full-time enrollment in college housing than did public institutions (32 percent). Comparable figures were 45 percent at four-year colleges, 33 percent at universities, and 32 percent at two-year colleges.
- Occupancy rates for student housing were high at each type of institution. At universities, occupants exceeded slightly the design capacity of the facilities (101 percent) whereas at two- and four-year colleges, the occupancy rate was 95 percent.
- One percent of the students who lived in institutionally controlled housing were in "substandard" quarters.
- In the fall of 1980, the average monthly charge for single students in institutionally-owned housing was $108 at private institutions and $97 at public institutions. Monthly charges for married students were 60 and 54 percent higher, respectively.
- The more than than 2,000 institutions with student housing facilities spent $2.6 billion of their current funds on such facilities in fiscal year 1981. Fifty-nine percent of the total was spent by public institutions.
- Operations and maintenance expenditures for institutionally owned student housing amounted to $1.1 billion in fiscal year 1981. About two-fifths of that was for utilities.

- Replacement value of the entire physical plant at institutions with student housing was over $125 billion in 1981. One quarter of that amount was attributed to student housing.
- About half of the institutions with student housing reported having renewal and replacement funds for such facilities totaling $450 million in fiscal year 1981.
- High cost, an insufficient supply, and poor transportation conditions were the most frequently cited problem conditions relating to off-campus rental housing.
- The highest priority for student housing facilities at four out of ten institutions is the rehabilitation of existing buildings. Construction of new student housing facilities has the greatest priority at only two out of ten institutions.

Introduction

This survey was sponsored by the Department of Education as a means of gathering specific data that could be used to examine the condition of student housing on U.S. campuses. It provides a broad assessment of college student housing in terms of occupancy rates, extent of substandard housing, housing expenses to the student, and off-campus rental housing conditions. The survey also asked about financial aspects of student housing including operating costs, indebtedness, and replacement value of the present housing plant.

Methods Summary

The Higher Education Panel is a continuing survey research program created in 1971 by the American Council on Education to conduct specialized surveys on topics of current policy interest both to the higher education community and to government agencies.

The Panel is a stratified sample of 760 colleges and universities drawn from the population of more than 3,000 institutions listed in the National Center for Education Statistics' (NCES) Education Directory, Colleges and Universities. All institutions in the population are grouped according to the Panel's stratification design, which is based on three factors: institution type (whether a school is a university, four-year college, or two-year college), control or governance (whether it is public or private), and size (as measured by full-time equivalent enrollment). For any given survey, either the entire Panel or an appropriate subgroup is used.

The survey instrument was mailed in September 1981 to all Panel institutions. Delays in response were encountered because many institutions were not able to provide the requested financial data by the original due date.

All institutions that had not responded prior to mid-December were telephoned to determine whether or not they had student housing. A total of 231 Panel institutions had no student housing. Of the Panel institutions with housing (529), questionnaires were returned by 407 or 77 percent.

Data from responding institutions were statistically adjusted to provide a national estimate for institutions with student housing (2,075). Institutional weights were created for each stratification cell (as shown in appendix B) by computing the ratio of institutions in the population to the number of Panel institutions that responded.

The relatively limited number of two-year institutions that had student housing (36 percent) and the lower than average response rate from those that did (62 percent) require that data relating to that sector be used with caution.

Appendix B contains more detailed technical notes about (1) the stratification and weighting design used to produce the national estimates in this report; (2) a comparison of selected institutional characteristics among respondents and nonrespondents; and (3) a tabular presentation and discussion of the confidence intervals for estimates derived from the survey.

Findings

Of the more than 3,000 higher education institutions covered in this survey, over two-thirds (68 percent) provided housing for their students. This included 98 percent of the universities, 87 percent of the four-year colleges, but only 36 percent of the two-year colleges.

Total occupancy of student housing was estimated at 2.4 million individuals, the equivalent of one-third of the nation's full-time enrollment in the fall of 1980. At universities and four-year colleges the proportion was two-fifths (41 percent) and at two-year colleges it was one-eighth (12 percent). The paucity of student housing among two-year colleges reflects their primary service to residents of communities within the college locale.

For the remainder of this report, the data refer to only the 2,075 institutions that have student housing.

Applications and Placements

In fall 1980, full-time enrollments were about 5.9 million students at the higher education institutions with housing. Applications for housing totaled 2.7 million, and 2.3 million students were placed[1] in institutionally controlled housing. These figures represent 46 and 39 percent, respectively, of the full-time enrollment. Placements included 860,000 students at the 183 universities, 1.3 million at the 1,480 four-year colleges, and a relatively small number (158,000) at the 411 two-year colleges that provide housing.

---

1. A difference of nearly 100,000 exists between the estimates of the number of students "placed in housing" and the actual occupancy of the housing facilities. The precise reason for this difference was not determined, but the contributing elements include the fact that spouses and resident dormitory supervisors were included as occupants but not always as "students placed." Furthermore, some institutions may "place" a student only once--at the beginning of his/her four-year attendance at the institution--whereas other institutions place a student at the beginning of each year of attendance.

Figure 1

Applicants for Student Housing and Placements
as a Percentage of Full-time Enrollment
by Control of Institution, Fall 1980

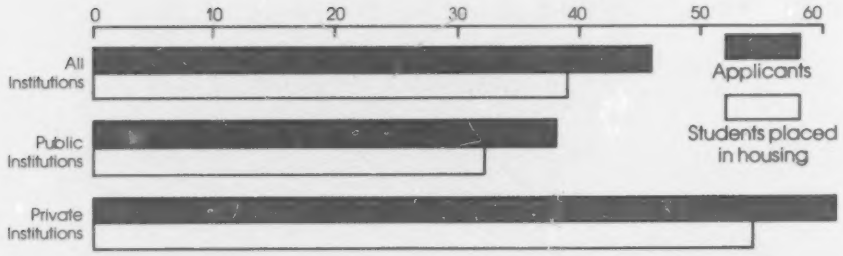


Figure 1 and table A show how student housing was apportioned among public and private universities, four-year colleges, and two-year colleges.

The average number of students placed in housing per institution was substantially greater at public than at private institutions (nearly twice as great at universities and two and two-thirds times greater at four-year colleges). However, the proportion of the full-time student body in institu-

Table A

Students Placed in Student Housing

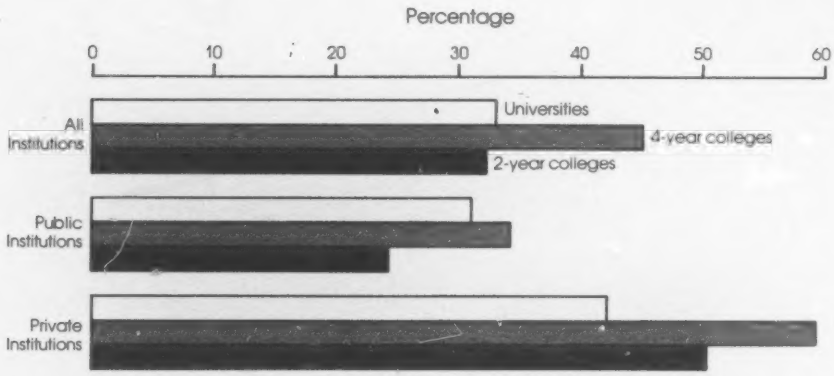
Type of Institution	Institutions with Housing	Number of Students Placed (000's)	Average per Institution	As a Percentage of Full-time Enrollment
Public				
Universities	110	626	5,700	31
Four-year colleges	341	546	1,600	34
Two-year colleges	206	82	400	24
Private				
Universities	73	234	3,200	42
Four-year colleges	1,139	722	600	59
Two-year colleges	205	77	400	50

tionally controlled housing was higher among private institutions (53 vs. 32 percent).

The small number of students housed at two-year colleges and of respondents from the two-year college sector strongly suggests that the weighted estimates in this report pertaining to those institutions be used with caution.

Figure 2

Percentage of Full-time Students
in Institutionally Controlled Student Housing,
Fall 1980



Capacity and Occupancy Levels

Three important areas of inquiry in this survey were to ascertain: (1) the number of individuals the available housing was designed to accommodate; (2) the number of students actually housed in fall 1980; and (3) the number of students living in substandard housing.[2]

2. Substandard housing was defined as housing that can be documented as meeting one or more of the following conditions:

a. Structurally unsafe (ceilings, floors, etc. need repair)
b. Insufficient hot and cold running water
c. No usable flush toilets
d. No operational bathtub or shower
e. Unit considered unsafe by fire inspection report
f. Unit considered below standard by health inspection report.

Overall, the design capacity of all institutionally controlled housing covered by the survey was 2.45 million students. Total occupancy reached 2.38 million students or 97 percent of capacity. There were several deviations from this overall norm among different types of institutions, as shown in table B.

Table B

Occupancy of Student Housing Facilities

Control and Type of Institution	Total Occupancy (000's)	As a Percentage of Design Capacity
All institutions		
Universities	918	101
Four-year colleges	1,294	95
Two-year colleges	168	95
Public institutions		
Universities	676	101
Four-year colleges	559	97
Two-year colleges	91	95
Private institutions		
Universities	242	101
Four-year colleges	734	94
Two-year colleges	77	94

In general, occupancy levels at both public and private universities tended to be slightly above design capacity, while at four-year and two-year colleges occupancy was somewhat below capacity, with private colleges showing a slightly lower rate than public four- and two-year colleges.

Overall, respondents judged that one percent of the occupants were housed in substandard facilities. Universities reported the least substandard housing occupancy rate (.5 percent) and four-year colleges, the most (1.4 percent).

The proportion of students in housing leased rather than owned by the institutions was very small--two percent nationally. Public institutions reported 1 percent and the private sector, 3 percent.

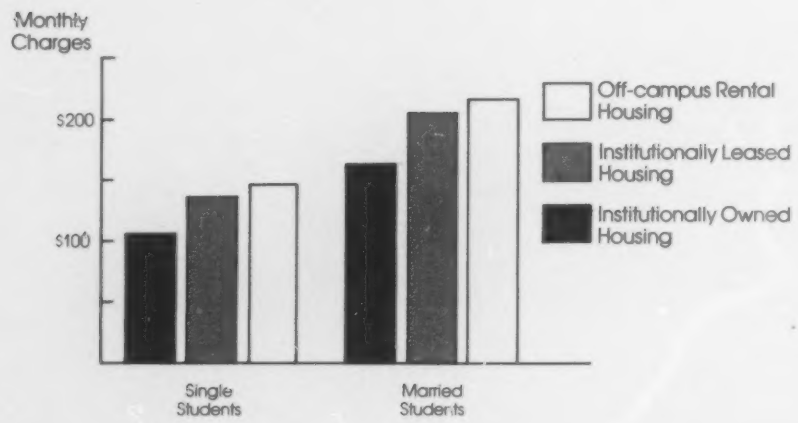
Monthly Housing Charges

Survey respondents were asked to estimate average monthly charges for students placed in housing in fall 1980. Institutions using a comprehensive fee that combines room and board were asked to exclude board charges and report only that portion of the fee attributable to student housing.

As shown in figure 3, average monthly charges were lowest for housing owned by the institution and highest for off-campus rentals. These differences applied to both single and married student housing although, as expected, the

Figure 3

Monthly Charges for Student Housing
by Housing Type, All Institutions
Fall 1980

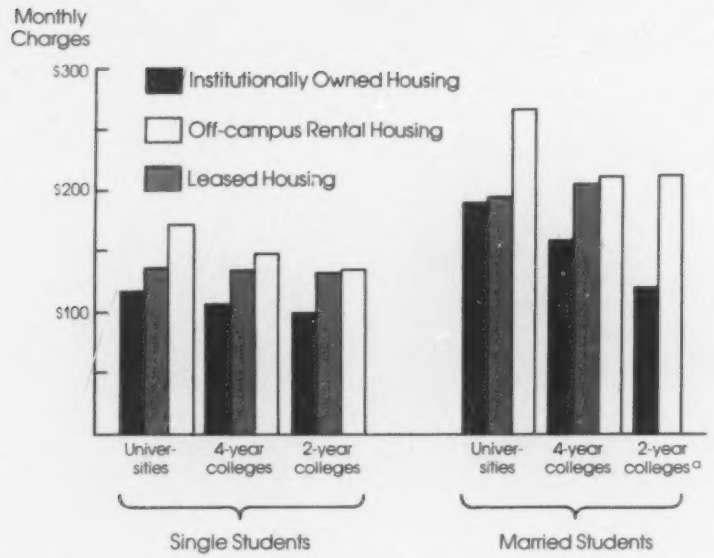


housing charges for married students were consistently higher than for single students. In housing owned by the institutions, for example, monthly charges averaged $104 for single students and $162 for married students.

Differences in monthly charges were also apparent among types of institution (figure 4). For both single and married students, average costs for

Figure 4

Monthly Charges for Student Housing
by Institution and Housing Type
Fall 1980



a. Two-year colleges reported no leased housing for married students.

institutionally owned housing were highest in university settings and somewhat lower at four-year and two-year colleges. This pattern of differences occurred in off-campus rental housing also.

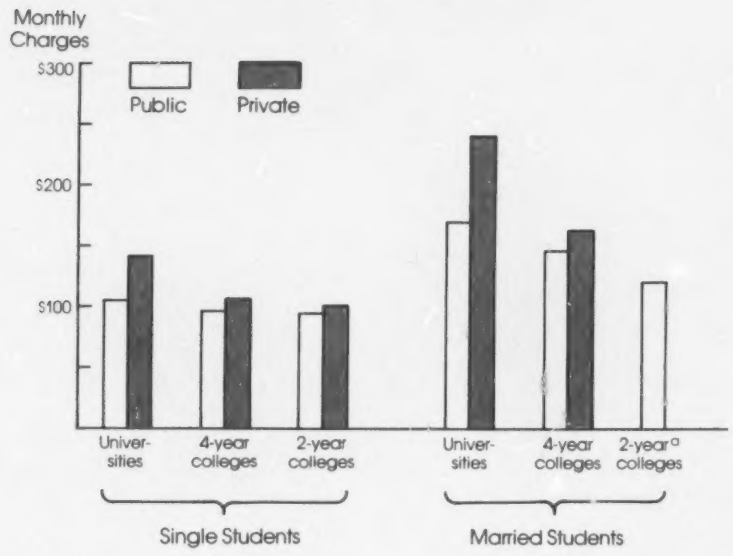
Figure 5 shows how average housing charges varied among public and private institutions. In each comparison depicted, charges were higher at private institutions for both single and married students and at each type of institution.

Expenditures for Student Housing

From the institution's perspective, the effort to house students requires large capital outlays and substantial annual expenses. To determine the extent

Figure 5

Monthly Charges for Institutionally Owned Student Housing by Occupants' Marital Status and Institution Type and Control Fall 1980



a. Estimates are not shown because of the small number of Panel institutions in this cell and their low response rate to this item.

of the resources used, the survey included several questions about institutional expenditures and estimates of physical plant values.[3]

Estimates from the present survey indicate that total current fund expenditures for the nearly 2,100 institutions with housing amounted to over $53 billion in fiscal year 1981. The portion spent on student housing was approximately $2.6 billion, or nearly 5 percent. That percentage varies somewhat by control or type of institution. The range, however, is quite small as shown in table C.

These differences reinforce the findings noted above--that the percentage of students housed was larger at private institutions than at public.

3. Questions about financial data showed substantial nonresponse, suggesting that for some institutional categories--notably the two-year sector--the data should be approached with caution. Consequently, most of the financial data are analyzed here by control of institution and for universities and four-year colleges only.

Table C

Student Housing Expenditure Percentages,
Fiscal Year 1981

Control and Type of Institution	Percentage of Current Funds Expenditures
All institutions	4.8
Public institutions	4.7
Private institutions	5.0
Universities	4.0
Four-year colleges	5.9

Therefore, private institutions can reasonably be expected to have spent a larger share of their current funds on student housing.

The considerable difference between the percentages for the universities and the four-year colleges may be explained in part by two conditions. First, four-year institutions housed a larger proportion of their full-time students than did the universities (see table A), so they can be expected to have devoted a larger share of their resources to that activity. Second, the expenditures for research at the universities is proportionately much greater than at four-year colleges, thereby enlarging the current fund expenditures base from which the housing percentages were calculated and reducing the latter's share of the whole.

When the $2.6 billion for student housing is divided by the 2.4 million occupants, the average expenditure per occupant comes to nearly $1,100. Again, that figure varies according to type and control of institution, as shown in table D.

Operations and Maintenance. The operation and maintenance of student housing cost more than a billion dollars in fiscal year 1981, or just over two-fifths of such expenditures for the entire physical plant. Nearly half a

Table D

Student Housing Expenditures,
Fiscal Year 1981

Control and Type of Institution	Total (in millions)	Per Occupant
All institutions	$2,566	$1,078
Public institutions	1,517	1,143
Private institutions	1,049	996
Universities	1,182	1,287
Four-year colleges	1,248	964

billion dollars ($473 million) was spent for the utilities that serviced student housing.

Table E shows the expenditures for utilities on both an aggregate and a per student basis by type and control of institution. Per occupant expenditures for this item do not vary greatly, whether viewed by control where the difference is only $31, or by type, where the difference is only slightly more--$36. The variation that does appear may depend on the geographic location of the institutions and the type of fuel they use. These factors were not addressed in the survey.

Table E

Utilities Expenditures for Student Housing,
Fiscal Year 1981

Control and Type of Institution	Total (in millions)	Per Occupant
All institutions	$473	$199
Public institutions	254	185
Private institutions	228	216
Universities	206	224
Four-year colleges	244	188

Value and Indebtedness of Student Housing Facilities

The book value of student housing is estimated to be $12.6 billion. This represents about one-quarter of the book value of the entire physical plant at those institutions that have student housing.

A related statistic is the estimated replacement value for these buildings. That figure is more than twice as great as the book value, amounting to $31 billion for student housing plant. Again, that figure is one-quarter of the total physical plant replacement value.

Public institutions reported that nearly one-fourth (23 percent) of their physical plants' replacement value was attributable to student housing, whereas private institutions reported a somewhat higher figure of 27 percent.

Universities reported about two of every ten dollars of their physical plant attributable to student housing, and four-year colleges reported nearly three of every ten. The broader range of facilities at universities are likely to be the reason for the difference. For example, the heavy investment in research facilities found at universities enlarges the value of the physical plant base from which the student housing plant figures are calculated.

Dividing the replacement value by the number of occupants of institutionally owned student housing produces an estimate of the replacement value per occupant. Table F shows that figure for all institutions to be $13,300. For public institutions it is slightly higher, and for universities it is over $1,000 higher than for four-year colleges.

About half of all institutions with student housing reported setting aside renewal and replacement funds for such housing. Table G shows that a higher than average proportion of public institutions and of universities set aside such funds. The lower percentage in the private sector may reflect both the deferred maintenance stance adopted by institutions in tight financial

Table F

Estimated Replacement Value of Student Housing

Control and Type of Institution	Total (in millions)	Per Occupant
All institutions	$31,041	$13,320
Public institutions	17,542	13,431
Private institutions	13,499	13,179
Universities	12,834	14,236
Four-year colleges	16,728	13,142

Note: Data are as of the end of fiscal year 1981.

circumstances and the traditional practice of relying on major donors or special fund-raising drives to replace and renew campus structures.

The total amount set aside for these purposes as of the end of fiscal year 1981 was $450 million, or $413 per occupant. Universities and public institutions show higher than average per occupant amounts set aside; four-year colleges and private institutions show lower than average figures.

Response to the questionnaire item concerning physical plant indebtedness was poorer than the response to any other item. Furthermore, a number of large public institutions indicated that these data were handled by the state or at

Table G

Renewal and Replacement Funds for Student Housing

Control and Type of Institution	Institutions with Funds		Funds per Occupant
	Number	Percentage	
All institutions	1,019	49	$413
Public institutions	383	58	433
Private institutions	636	45	383
Universities	117	64	436
Four-year colleges	728	49	377

Note: Financial data are as of the end of fiscal year 1981.

the system level so that the individual institution could not respond meaningfully. Therefore, the data related to this question should be considered as indicative of general magnitudes rather than of actual indebtedness.

Table H shows that colleges and universities with student housing facilities owed a total of $13.7 billion at the beginning of fiscal year 1981. Of this, $6.5 billion, or nearly half, was for student housing facilities. Estimates for public institutions' debt for student housing was $3.9 billion, or just over half of their total debt. The estimate for the private sector was somewhat lower at $2.7 billion, or considerably less than half of its total debt. The relationship between the two percentages (51 vs. 43) seems appropriate inasmuch as in the public sector, capital costs for academic structures are frequently appropriated by institutions' sponsoring governments, whereas in the private sector, institutions may borrow more frequently for academic facilities.

Table H

Physical Plant Indebtedness of Institutions with Student Housing

Control of Institution	Total Physical Plant (in millions)	Student Housing Plant Amount (in millions)	Student Housing Plant Percent of Total
All institutions	$13,706	$6,527	48
Public institutions	7,534	3,862	51
Private institutions	6,173	2,665	43

Note: Data are as of the beginning of fiscal year 1981.

Overall, payments made during the fiscal year on the principal amounted to $661 million for all physical plant debt and $232 million on the amount owed for student housing. Table I shows these figures for public and private institutions, and the percent that they represent of the principal outstanding at the beginning of the year. The debt reduction for student housing tends to be

at a lesser rate than for the total physical plant. This may result from a longer pay-back period or the existence of other, more advantageous terms resulting from the federal student housing loan program. The present survey did not address that question.

Table I

Amount Paid on Indebtedness during Fiscal Year 1981

Control of Institution and Type of Debt	Amount (in millions)	As a Percentage of Indebtedness
All institutions		
Total physical plant	$661	4.8
Student housing	232	3.6
Public institutions		
Total physical plant	344	4.6
Student housing	138	3.6
Private institutions		
Total physical plant	317	5.1
Student housing	94	3.5

Note: Indebtedness figures used for percentage calculations are as of the beginning of fiscal year 1981.

Off-campus Housing

The survey also provided a general assessment of conditions associated with the off-campus housing available to students. Respondents were asked whether off-campus housing could be characterized by any of the following: substandard conditions, unsafe neighborhoods, undersupply, distance from campus, poor transportation conditions, or high cost. In all institutional settings, high cost was the most frequently cited drawback to off-campus housing. Almost half of the university respondents mentioned that convenient and acceptable housing simply costs too much.

This opinion was echoed by 44 percent of the two-year college respondents and 35 percent of the four-year college respondents. Overall, a substantial

proportion of the institutions also cited the relative scarcity of off-campus housing, and poor transportation between their campuses and the off-campus housing (30 percent and 27 percent, respectively).

Table J

Percentage of Institutions Reporting Selected Off-campus Rental Housing Conditions

Conditions Affecting Off-campus Rental Housing	All Institutions	Universities	Four-year Colleges	Two-year Colleges
Not affordable	38	49	35	44
Not enough	30	37	28	31
Poor transportation conditions	27	22	28	25
In substandard condition	4	7	4	4
In generally unsafe areas	4	11	4	0
Over 20 miles from campus	2	1	3	0

Note: Multiple responses were permitted.

What, if anything, were institutions doing about this lack of reasonable, accessible off-campus housing? In response to a question about whether or not they placed or attempted to place students in off-campus rental housing, one-fifth of the institutions said they did not. About one out of eight indicated that it had systematic procedures for such placement and two-thirds indicated that they helped students informally by posting openings on bulletin boards, announcements, etc.

Universities had the highest proportion (29 percent) of placement activity--about three times more than the four-year colleges. A slightly larger percentage of the institutions in the public sector reported a formal placement procedure--16 percent, compared with 12 percent in the private sector (table K and figure 6).

At the other extreme, just over ten percent of the universities, one-fifth of the four-year colleges, and slightly more than one-quarter of the two-year colleges reported no placement assistance at all. Thus, in general,

Table K

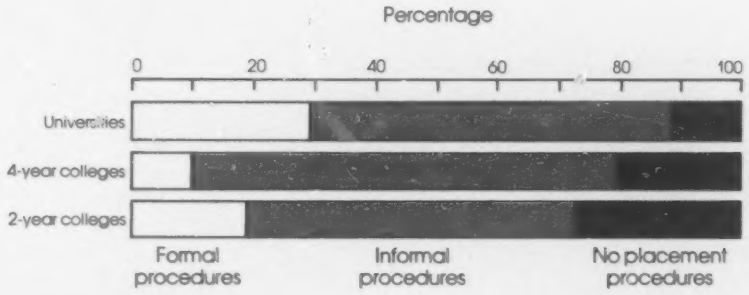
Off-campus Rental Housing Placement

Control and Type of Institution	Percentage of Institutions Offering Formal Procedures	Informal Procedures	No Assistance
All institutions	13	66	21
Public institutions	16	64	20
Private institutions	12	67	21
Universities	29	60	11
Four-year colleges	10	70	20
Two-year colleges	19	54	27

it is the universities that appear to offer the most assistance to students seeking off-campus housing. This effort by the universities may be a response to limited on-campus housing and the relative lack of off-campus housing at reasonable cost.

Figure 6

Percentage of Institutions Offering Off-campus Housing Assistance



Student Housing Priorities

Finally, the survey asked respondents to identify the one student housing facilities need that would have the greatest priority during the next two years. The four options were:

1. Energy conservation for existing student housing facilities
2. Construction of new student housing facilities
3. Substantial rehabilitation of existing student housing facilities
4. Acquiring existing structures for use as student housing facilities.

Two-fifths of all institutions indicated that rehabilitation was their greatest priority, and energy conservation was top-rated by nearly 30 percent. In contrast, acquiring more buildings for student housing use was cited by fewer than 5 percent of the respondents.

Table L shows these priorities by type and by control of institution. Rehabilitation was the highest priority of the largest proportion of all types of institutions--universities, four-year colleges, and two-year colleges. A slightly greater percentage of public institutions reported a higher priority for new construction and for greater energy conservation than for rehabilitation. In the private sector, nearly half (46 percent) of the institutions identified rehabilitation as the greatest student housing priority. Slightly more than one-quarter so rated energy conservation, and about one-sixth noted that new construction would have the greatest priority.

Table L

Reported Student Housing Priorities
(In percentages.)

Control and Type of Institution	Rehabilitation	Energy Conservation	New Facilities	Acquisition	Other
All institutions	40	29	21	4	6
Public institutions	27	32	29	2	9
Private institutions	46	28	17	4	5
Universities	39	29	20	7	6
Four-year colleges	42	31	20	2	6
Two-year colleges	34	24	26	8	9

Conclusions

Two-thirds of the colleges and universities provide residential facilities for at least some of their students. The cost in fiscal year 1981 was approximately two and one-half billion dollars, representing about 5 percent of the current funds expenditures of those institutions that provided such housing. The total replacement value of the nation's entire collegiate physical plant at these "student housing institutions" amounted to $125 billion, of which about one-quarter was attributed to student housing. Indebtedness on the housing segment of the physical plant amounted to $6.5 billion.

Nearly seven out of every eight applicants for housing were accommodated by the institutions, although this percentage varied both by control and type of institution. Nationally, student housing facilities were nearly filled. The occupancy rate for all institutions was 97 percent, and at universities, occupancy slightly exceeded the design capacity. Although institutions reported some students housed in substandard facilities, the proportion was only one percent nationally.

Student housing, in theory, is provided "at cost." The average charge to the single student for nine months of occupancy is slightly less than the average per occupant cost to the institution when national data are used as the basis for calculation. On the average, the private institutions have higher average monthly charges for housing than public institutions.

Off-campus rental housing was more expensive than institutionally controlled housing by about forty percent nationally. This relatively high cost was a condition cited by more than one-third of the institutions as affecting their campuses. But off-campus housing is considered an important part of the higher education picture; 30 percent of the institutions reported that there was not enough of it available for those students who wanted it.

Finally, the rehabilitation of existing facilities was cited as the highest priority for the next two years by the largest proportion of respondents--four out of ten, and energy conservation at nearly three out of ten institutions. The construction of new housing facilities was considered the highest priority at only one-fifth of the colleges and universities.

The relatively high ratio of students housed to applicants for housing, the high occupancy rates, and the small percentage of individuals in housing classed "substandard" may be interpreted as indicating careful management of this multibillion dollar plant. That 70 percent of the institutions have rehabilitation and energy conservation as priorities for student housing indicates a change from past decades, when institutions were planning for massive increases in the number of students housed. Even in this era of retrenchment, however, a substantial 20 percent of the institutions report their top priority to be new facilities.

For student housing today, as for higher education in general, changing conditions require that planners husband the resources available to them as imaginatively as possible so that housing facilities remain fully serviceable over the coming years.

Detailed Statistical Tables

Note: In the following tables, detail may not sum to totals because of rounding.

Table 1

Number and Percentage of Institutions
with Student Housing, Fall 1980

Control and Type of Institution	All Institutions	Institutions with Student Housing	
		Number	As a Percentage of All Institutions
All institutions	3,037	2,075	68
Universities	186	183	98
Four-year colleges	1,705	1,480	87
Two-year colleges	1,146	411	36
Public institutions	1,432	657	46
Universities	112	110	98
Four-year colleges	420	341	81
Two-year colleges	900	206	23
Private institutions	1,605	1,417	88
Universities	74	73	99
Universities	74	73	99
Four-year colleges	1,285	1,139	89
Two-year colleges	246	205	83

Table 2

Applications and Placement in Housing as a Percentage of Full-time Enrollment, by Control and Type of Institution, Fall 1980

Control and Type of Institution	Housing Applications as a Percentage of Full-time Enrollment	Students Placed in Housing as a Percentage of	
		Housing Applications	Full-time Enrollment
All institutions	46	85	39
Universities	40	84	33
Four-year colleges	51	87	45
Two-year colleges	43	75	32
Public institutions	38	83	32
Universities	36	86	31
Four-year colleges	43	79	34
Two-year colleges	28	86	24
Private institutions	61	88	53
Universities	53	79	42
Four-year colleges	62	95	59
Two-year colleges	76	66	50

Table 3

Capacity, Use, and Condition of Institutionally Controlled Student Housing, by Control and Type of Institution, Fall 1980

Control and Type of Institution	Total Occupancy		Occupancy of Substandard Housing	
	(in 000's)	As a Percentage of Design Capacity	Number	As a percentage of Total Occupants
All institutions	2,380	97	24,425	1.0
Universities	918	101	1,495	.5
Four-year colleges	1,294	95	18,734	1.4
Two-year colleges	168	95	1,496	.9
Public institutions	1,327	99	9,602	.7
Universities	676	101	1,596	.2
Four-year colleges	559	97	7,917	1.4
Two-year colleges	91	95	189	.2
Private institutions	1,053	95	14,823	1.4
Universities	242	101	2,599	1.1
Four-year colleges	734	94	10,917	1.5
Two-year colleges	77	94	1,307	1.7

Table 4

Percentage of Occupants by Marital Status, Type of Housing (Owned or Leased), and Control and Type of Institution, Fall 1980

Control and Type of Institution	Percentage of Occupants Who Are		Percentage of Occupants in Institutionally	
	Single	Married	Owned Housing	Leased Housing
All institutions	92	8	98	2
Universities	86	14	98	2
Four-year colleges	96	4	98	2
Two-year colleges	91	9	98	2
Public institutions	89	11	99	1
Universities	84	16	99	1
Four-year colleges	95	5	99	1
Two-year colleges	84	16	99	1
Private institutions	96	4	97	3
Universities	93	7	97	3
Four-year colleges	97	3	97	3
Two-year colleges	100	0	96	4

Table 5

Monthly Charges for Student Housing, by Students' Marital Status, Type of Housing, and Control and Type of Institution, Fall 1980

Control and Type of Institution	Single Students			Married Students		
	Institutionally		Off-campus	Institutionally		Off-campus
	Owned Housing	Leased Housing	Rental Housing	Owned Housing	Leased Housing	Rental Housing
All institutions	$104	$135	$147	$162	$203	$218
Universities	117	137	170	190	192	268
Four-year colleges	105	135	147	158	208	210
Two-year colleges	98	132	133	120	*	212
Public institutions	97	107	141	149	201	237
Universities	102	116	158	168	201	257
Four-year colleges	97	102	142	147	*	227
Two-year colleges	96	100	130	120	*	240
Private institutions	108	141	151	173	203	203
Universities	140	155	186	242	187	288
Four-year colleges	107	140	149	163	208	201
Two-year colleges	100	139	138	*	*	163

* No data reported in this category.

Table 6

Current Funds Expenditures and Student Housing Expenditures,
by Control and Type of Institution,
Fiscal Year 1980-81

Control and Type of Institution	Total Current Funds Expenditures (CFX)	Student Housing Expenditures (SHX)					
		Total		For Operations & Maintenance		For Utilities	
		Amount	As a Percentage of CFX	Amount	As a Percentage of Total SHX	Amount	As a Percentage of Total SHX
All institutions	$53,148	$2,566	5	$1,086	42	$473	18
Universities	29,749	1,183	4	448	38	206	17
Four-year colleges	21,255	1,248	6	590	47	244	20
Two-year colleges	2,143	136	6	48	35	23	17
Public institutions	32,310	1,517	5	543	36	245	16
Universities	19,386	835	4	291	35	139	17
Four-year colleges	11,512	599	5	234	39	96	16
Two-year colleges	1,412	82	6	18	22	11	13
Private institutions	20,837	1,049	5	542	52	228	22
Universities	10,364	346	3	157	45	67	19
Four-year colleges	9,743	649	7	356	55	148	23
Two-year colleges	*	*	*	*	*	*	*

Note: Dollar figures are in millions; data describe only those institutions with student housing. Totals for CFX and SHX include mandatory transfers.

* Estimates are not shown because of the small number of Panel institutions in the cell and their low response rate to this item.

Table 7

Book Value and Replacement Value of Physical Plant,
by Control and Type of Institution,
Fiscal Year 1980-81

Control and Type of Institution	Book Value			Replacement Value		
	Total	Student Housing		Total	Student Housing	
		Amount	As a Percentage of Total		Amount	As a Percentage of Total
All institutions	$53,172	$12,563	24	$126,936	$31,041	25
Universities	25,096	4,879	19	61,596	12,834	21
Four-year colleges	25,528	6,971	27	59,568	16,728	28
Two-year colleges	2,548	712	28	5,772	1,479	26
Public institutions	31,957	6,786	21	76,602	17,542	23
Universities	17,324	3,356	19	42,829	9,350	22
Four-year colleges	12,878	3,082	24	29,909	7,490	25
Two-year colleges	1,755	347	20	3,865	702	18
Private institutions	21,215	5,777	27	50,334	13,499	27
Universities	7,772	1,523	20	18,767	3,484	19
Four-year colleges	12,651	3,889	31	29,659	9,238	31
Two-year colleges	*	*	*	*	*	*

Note: Dollar figures are in millions; data describe only those institutions with student housing.

* Estimates are not shown because of the small number of Panel institutions in the cell and their low response rate to this item.

Table 8

Student Housing Renewal and Replacement Funds
by Control and Type of Institution,
Fiscal Year 1980-81

Control and Type of Institution	Number of Institutions with Student Housing	Number of Institutions Reporting Renewal and Replacement Funds	Renewal and Replacement Funds Total (in millions of dollars)	Renewal and Replacement Funds Per Occupant
All institutions	2,074	1,019	$450	$413
Universities	183	117	206	436
Four-year colleges	1,480	728	207	377
Two-year colleges	411	174	36	553
Public institutions	657	383	287	433
Universities	110	75	155	436
Four-year colleges	341	202	107	402
Two-year colleges	206	106	25	618
Private institutions	1,417	636	163	383
Universities	73	42	51	438
Four-year colleges	1,139	525	100	354
Two-year colleges	205	*	*	*

* Estimates are not shown because of the small number of Panel institutions in the cell and their low response rate to this item.

Table 9

Physical Plant Indebtedness and Payments on Principal,
by Control and Type of Institution,
Fiscal Year 1980-81

Control and Type of Institution	Amount Owed, Beginning of FY 1981			Payments on Principal during FY 1981		
	Total Plant	Student Housing Amount	Student Housing As a Percentage of Total	Total Plant	Student Housing Amount	Student Housing As a Percentage of Total
All institutions	$13,706	$6,527	48	$661	$232	35
Universities	6,699	2,754	41	354	96	27
Four-year colleges	6,421	3,390	53	268	121	45
Two-year colleges	585	383	65	39	16	41
Public institutions	7,534	3,862	51	344	138	40
Universities	4,181	1,939	46	205	66	32
Four-year colleges	3,025	1,714	57	120	64	53
Two-year colleges	328	209	64	19	8	41
Private institutions	6,172	2,665	43	317	94	30
Universities	2,158	815	32	149	29	20
Four-year colleges	3,396	1,677	49	149	56	38
Two-year colleges	*	*	*	*	*	*

Note: Dollar figures are in millions; data describe only those institutions with student housing.

* Estimates are not shown because of the small number of Panel institutions in the cell and their low response rate to this item.

Table 10

Off-campus Rental Housing Conditions,
by Control and Type of Institution, Fall 1981
(In percentages)

Off-campus Rental Housing Condition	Total				Public				Private			
	All Institutions	Universities	4-year Colleges	2-year Colleges	All Institutions	Universities	4-year Colleges	2-year Colleges	All Institutions	Universities	4-year Colleges	2-year Colleges
(Number of institutions with student housing)	(2,075)	(183)	(1,480)	(411)	(657)	(110)	(341)	(206)	(1,417)	(73)	(1,139)	(205)
Percentage that reported:												
Cost of convenient and acceptable off-campus rental housing is not affordable for most students.	38	49	35	44	49	45	42	62	33	55	33	25
Not enough off-campus rental housing is available for those who want it.	30	37	28	31	41	31	40	50	24	45	25	13
Most off-campus rental housing is within 20 miles of the campus, but transportation conditions are poor.	27	22	28	25	39	21	47	36	21	25	22	13
Most off-campus rental housing in the local area is in generally unsafe areas or neighborhoods	4	11	4	0	5	9	6	0	4	13	4	0
Most off-campus rental housing in the local area is in substandard condition.	4	7	4	4	8	5	9	7	2	9	2	0
Most off-campus rental housing is over 20 miles from the campus. campus.	2	1	3	0	<1	1	0	0	3	2	4	0

Note: Multiple responses were permitted; therefore, totals may not sum to 100 percent.

Table 11

Off-campus Rental Housing Placement Procedures,
by Control and Type of Institution, Fall 1981
(In percentages.)

Type of Procedure	Total				Public				Private			
	All Institutions	Universities	4-year Colleges	2-year Colleges	All Institutions	Universities	4-year Colleges	2-year Colleges	All Institutions	Universities	4-year Colleges	2-year Colleges
Formal procedures	13	29	10	19	16	27	14	13	12	32	9	24
Informal procedures	66	60	70	54	64	57	63	70	67	64	72	38
No assistance	21	11	20	27	20	16	23	17	21	4	19	38

Table 12

Student Housing Facilities Priorities,
by Control and Type of Institution, Fall 1981
(In percentages.)

Purpose Cited as Having Greatest Priority	Total				Public				Private			
	All Institutions	Universities	4-year Colleges	2-year Colleges	All Institutions	Universities	4-year Colleges	2-year Colleges	All Institutions	Universities	4-year Colleges	2-year Colleges
(Number of institutions with student housing)	(2,075)	(183)	(1,480)	(411)	(657)	(110)	(341)	(206)	(1,417)	(73)	(1,139)	(205)
Percentage that reported:												
Substantial rehabilitation of existing housing	40	39	42	34	27	41	29	17	46	37	46	50
Energy conservation for existing housing	29	28	30	24	32	31	38	23	28	25	28	25
Construction of new housing	21	19	20	26	29	20	26	39	17	18	18	13
Acquiring existing structures for use as housing	4	7	2	8	2	2	2	2	4	14	2	13
Other	6	6	6	9	9	6	5	18	5	6	6	0

Note: Percentages may not sum to 100 percent because of rounding.

Appendix A: Survey Instrument

AMERICAN COUNCIL ON EDUCATION
ONE DUPONT CIRCLE
WASHINGTON, D. C. 20036

September 14, 1981

HIGHER EDUCATION PANEL
(202) 833-4757

Dear Higher Education Panel Representative:

Attached is Higher Education Panel survey #55, "An Assessment of College Student Housing and Physical Plant." Sponsored by the U.S. Department of Education, the survey seeks basic data concerning higher education's physical plant in general and student housing in particular.

There is growing concern about the adequacy and condition of higher education's physical plant. Despite the independence of today's students, there are reports that institutions are unable to provide student housing for all those desiring it. What many of us consider "newer construction" is approaching the quarter century mark, and there is concern that the deferred maintenance posture of numerous institutions may be taking a serious toll. This survey is designed to assess the demand for, the capacity of, and the condition of student housing facilities. It also contains questions concerning the value and operating costs of the physical plant in general.

Our field test survey indicates that questions 1 through 7 can be answered by your student housing office. The data requested in question 8 can best be obtained from your business office. As usual, however, we leave that judgment up to you.

Please understand that your institution's response will be protected to the maximum extent permissible by law. As with all our surveys, the data you provide will be reported in summary fashion only and will not be identifiable with your institution. This survey is authorized by the National Science Foundation Act of 1950, as amended. Although you are not required to respond, your cooperation is needed to make the results comprehensive, reliable, and timely.

Please return the completed questionnaire to us by October 9, 1981. A post paid preaddressed envelope is enclosed for your convenience. If you have any problems or questions, please do not hesitate to telephone us collect at (202) 833-4757.

Thank you for your assistance.

Sincerely,

Frank J. Atelsek

Frank J. Atelsek
Panel Director

OMB No. 3145-0009
Exp. 6/30/84

AMERICAN COUNCIL ON EDUCATION

Higher Education Panel Survey No. 55

AN ASSESSMENT OF COLLEGE STUDENT HOUSING AND PHYSICAL PLANT

1. Does your institution have institutionally controlled (owned or leased) student housing facilities?

( ) a. Yes. If yes, please answer the remaining items on the questionnaire.
( ) b. No. If no, you need not complete the remaining items. Go to page 4, fill in the contact person blanks and return the questionnaire.

2. **Student Housing Needs.**

Student Category	Number of Students: Single	Married	Total†
a. Full-time students enrolled in Fall 1980	_____	_____	( )
b. Students who applied to your institution for student housing for 1980–81	_____	_____	( )
c. Students placed in institutionally controlled (owned or leased) student housing	_____	_____	( )

†Report total only if separate data for the single and married categories are not available.

3. **Off-campus Rental Housing Placement.** Does your institution place or attempt to place students in off-campus rental housing (housing not controlled by the institution)? Check only one.

___ Yes, we have formal, systematic procedures that aid students in obtaining off-campus rental housing.

___ Yes, we assist students in obtaining off-campus rental housing in an informal manner, (bulletin boards, announcements, etc.)

___ No

4. **Capacity of Institutionally Controlled Student Housing.**

Type of Housing and Student	No. of individuals the housing was designed to accommodate	No. of individuals actually housed in Fall 1980: Total	In substandard housing*
a. Institutionally-owned student housing			
(1) for single students	_____	_____	_____
(2) for married students	_____**	_____**	_____**
b. Institutionally-leased housing			
(1) for single students	_____	_____	_____
(2) for married students	_____**	_____**	_____**

*Substandard housing is housing that can be documented as suffering from one or more of the following conditions:
a. Structurally unsafe (needs repairs to ceilings, floors, etc.)
b. Insufficient hot and cold running water
c. No usable flush toilets
d. No operational bathtub or shower
e. Unit considered unsafe by fire inspection report
f. Unit considered below standard by health inspection report

**Show total number of individuals, including spouse and children, whether or not they are students.

5. **Charges for Student Housing.** Please estimate the average monthly charges for housing to students placed by your institution in Fall 1980.

   If your institution uses a comprehensive fee that combines room and board, please exclude board charges; estimate and report *only that portion attributable to student housing.*

   NOTE that we are asking for *average monthly* charges, not for annual or term figures. If, for example, you have readily available the average annual charges for housing, and your institution is on the standard 9-month (approximately) academic year calendar, divide the annual charges by 9 to arrive at the estimated monthly figure and report it below.

Type of Student	Estimated average MONTHLY charge for: Institutionally-owned housing	Institutionally-leased housing	Off-campus rental housing
a. Single students	$ _____	$ _____	$ _____
b. Married students	$ _____	$ _____	$ _____

6. **Off-campus Rental Housing Conditions.** Listed below are six conditions related to off-campus rental housing. For which can you *show a clear indication* that they affect the off-campus rental housing situation at your institution? Check all that apply.

   ( ) a. Most off-campus rental housing in the local area is in substandard condition, as defined in question 4.
   ( ) b. Most off-campus rental housing in the local area is in generally unsafe areas or neighborhoods.
   ( ) c. There is not enough off-campus rental housing for those students who want it.
   ( ) d. Most off-campus rental housing is over 20 miles away.
   ( ) e. Most off-campus rental housing is within 20 miles, but transportation conditions are poor.
   ( ) f. The cost of convenient and acceptable off-campus housing is not affordable for most students.
   g. If you desire to explain any of the above conditions as they relate to your institution, please comment here.

7. **Student Housing Facilities Priorities.** In light of your institution's situation regarding student housing, which of the following purposes has the greatest priority at your institution over the next two years? Check only one.

   ( ) a. Energy conservation for existing student housing facilities
   ( ) b. Construction of new student housing facilities
   ( ) c. Substantial rehabilitation of existing student housing facilities
   ( ) d. Acquiring existing structures for use as student housing facilities
   ( ) e. Other purposes; please specify

8. **Financial Data.** Please provide the following financial information for the fiscal year ending in 1981. Follow HEGIS financial data definitions. Line numbers in parentheses refer to the HEGIS financial questionnaire. Show amounts in whole dollars.

a. **Current Funds (HEGIS, Part B)**

(1) Total Current Funds Expenditures and Mandatory Transfers (HEGIS, line B19) $ _____

(2) Operations and Maintenance of Plant expenditures for educational and general purposes (HEGIS line B8) $ _____

(3) Utilities expenditures for educational and general purposes $ _____

(4) Total *student housing* expenditures and mandatory transfers $ _____

(5) Operations and Maintenance of Plant expenditures for *student housing only* $ _____

(6) Utilities expenditures for *student housing only* $ _____

b. **Physical Plant Assets and Indebtedness (HEGIS, Parts C & D)**

Type of Financial Data	Amount: Total	Amount: For institutionally controlled student housing
(1) Book value of buildings (do *not* include land value) (HEGIS, line C2, col. 2)	$ _____	$ _____
(2) Replacement value (HEGIS, line C2, col. 6)	$ _____	$ _____
(3) Funds for renewal and replacement as of the end of the fiscal year	$ _____	$ _____
(4) Indebtedness of physical plant		
(a) Amount owed on principal at beginning of fiscal year (HEGIS, line D1)	$ _____	$ _____
(b) Payments made on principal during the year (HEGIS, line D3)	$ _____	$ _____

Thank you for your assistance. Please return this form by *October 9, 1981* to:

Higher Education Panel
American Council on Education
One Dupont Circle Suite 829
Washington, DC 20036

Please keep a copy of this survey for your records.

Person completing form:

Name _____

Dep't. _____

Phone _____

If you have any questions or problems, please call the HEP staff collect at (202) 833-4757

Appendix B

Technical Notes

Weighting

Data from responding Panel institutions were statistically adjusted to represent the national population of institutions that have institutionally controlled (owned and/or leased) student housing. All 760 Panel institutions were included in the survey, and responses were obtained from 638. Of these, 407 indicated that they had student housing. The following table shows the weighting design, including the estimated population, the total number of respondents, and the number of repondents that had institutionally controlled student housing.

The weighting technique used was the standard one employed for full Panel surveys. Data received from Panel members were adjusted for item and institutional nonresponse within each cell. Then institutional weights were

Table B-1

Stratification Design

Cell	Type of Institution	Population	Respondents	
			Total	with Student Housing
Total		3,037	638	407
01	Public universities	112	104	102
02	Private universities	75	54	53
03	Public medical schools	30	25	14
04	Public black four-year colleges FTE >3,000	13	10	7
05	Public nonblack four-year colleges FTE >8,750	107	76	57
06	Private medical schools	18	13	6
07	Private nonblack four-year colleges FTE >8,750	13	6	6
08	Public two-year colleges FTE >8,750	36	31	0
09	Public four-year colleges FTE 3,700 - 8,750	77	35	32
10	Public four-year colleges FTE <3,700	193	30	23
11	Private four-year colleges FTE 2,000 - 8,750	134	31	30
12	Private four-year colleges FTE 1,000 - 1,999	280	31	29
13	Private four-year colleges FTE <1,000	839	26	20
14	Public two-year colleges FTE 5,100 - 8,750	62	36	1
15	Public two-year colleges FTE 3,260 - 5,100	104	40	1
16	Public two-year colleges FTE 1,600 - 3,260	177	39	8
17	Public two-year colleges FTE <1,600	521	40	10
18	Private two-year colleges	246	11	8

applied to bring Panel data up to estimates representative of the national population.

Comparison of Respondents and Nonrespondents

Table B-2 compares survey respondents and nonrespondents against several variables. Higher-than-average response rates were recorded for universities and two-year colleges in the public sector, for institutions in the South and West, and for large institutions. Private institutions, those in the East and those with FTE enrollments of less than 1,000 had lower than average response rates.

Reliability of Survey Estimates

Because the statistics presented in this report are based on a sample, they will differ somewhat from the figures which would have been obtained if a

Table B-2

Comparison of Respondents and Nonrespondents
(In percentages.)

Institutional Characteristics	Respondents (N=638)	Nonrespondents (N=122)	Response Rate
Total	100.0	100.0	83.9
Control			
Public	73.2	44.3	89.6
Private	26.8	55.7	71.5
Type and control			
Public universities	16.3	4.9	94.5
Private universities	8.5	13.9	76.1
Public four-year colleges	27.6	29.5	83.0
Private four-year colleges	16.8	37.0	70.4
Public two-year colleges	29.1	9.0	94.4
Private two-year colleges	1.7	5.7	61.1
Region			
East	24.6	39.6	76.6
Midwest	24.6	24.0	84.4
South	29.6	21.5	87.9
West	21.2	14.9	88.2
Total undergraduate full-time equivalent enrollment (1976)			
Less than 1,000	17.9	35.3	72.6
1,000 - 4,999	40.1	40.1	83.9
5,000 and above	42.0	24.6	89.9

complete census had been taken using the same survey instrument, instructions, and procedures. As in any survey, the results are also subject to reporting and processing errors and errors due to nonresponse. To the extent possible, these types of errors were kept to a minimum by methods built into the survey procedures.

The standard error is primarily a measure of sampling variability--that is, the variations that might occur by chance because only a sample of the institutions is surveyed. The chances are about 68 out of 100 that an estimate from the sample would differ from a complete census by less than the standard error. The chances are about 90 out of 100 that it would be less than 1.65 times the standard error; about 95 out of 100 that it would be less than 1.96 times the standard error; and about 99 out of 100 that it would be less than 2.5 times as large. Thus, knowing the standard error permits us to specify a range within which we can have a stated confidence that a given estimate would lie if a complete census, rather than a sample survey, had been conducted. As an example, refer in table B-3 to the estimated number of single students housed in institutionally owned facilities at all institutions (line 1b). The 90 percent confidence interval for that item is plus or minus 98,000. Thus, chances are about 90 out of 100 that a complete census would show the number of such students would be more than 2,052,000 and less than 2,248,000.

Table B-3 shows 90 percent confidence intervals of selected survey items for all institutions and for public and private institutions separately.

Table B-3

Ninety Percent Confidence Intervals for Selected Survey Estimates by Control of Institution

Item	All Institutions		Public Institutions		Private Institutions	
	Estimate	Confidence Intervals (+ or -)	Estimate	Confidence Intervals (+ or -)	Estimate	Confidence Intervals (+ or -)
Institutionally owned single student housing (in thousands of students)						
a. Design capacity*	2,208	107	1,173	51	1,035	94
b. Occupancy*	2,150	98	1,166	49	985	86
Monthly charges for institutionally owned single student housing	$104	15	$97	42	$108	11
Expenditures & mandatory transfers for student housing (in thousands of dollars)	$2,565,572	135,345	$1,516,882	87,963	$1,048,690	102,864
Expenditures for operation and maintenance of student housing (in thousands of dollars)	$1,085,553	72,832	$543,352	38,565	$542,201	61,785
Replacement value of institutionally owned student housing (in thousands of dollars)	$31,041,073	2,216,831	$17,542,412	685,603	$13,498,661	2,108,148
Payments made during FY 1981 on the principal for institutionally owned student housing (in thousands of dollars)	$232,063	17,514	$138,340	12,697	$93,723	12,063

* The estimates on this line vary slightly from those shown in the detailed tables because the latter show totals for single and married students in institutionally owned and leased facilities.

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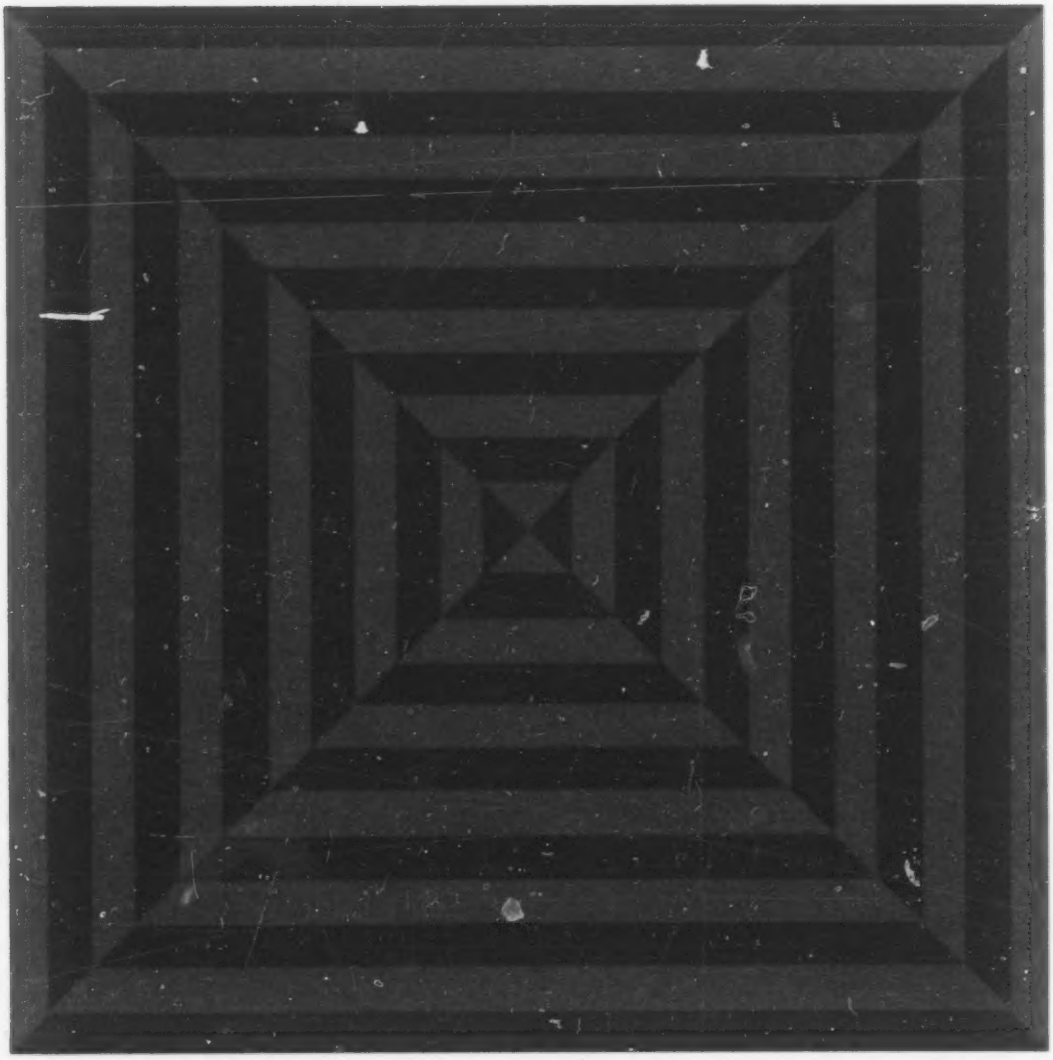
FINANCIAL SUPPORT FOR THE HUMANITIES: A SPECIAL METHODOLOGICAL REPORT

Irene L. Gomberg and Frank J. Atelsek



HIGHER EDUCATION PANEL REPORT NUMBER 56
AMERICAN COUNCIL ON EDUCATION

JANUARY
1983

A Survey Funded by the National Science Foundation, the U. S. Department of Education, and the National Endowment for the Humanities

AMERICAN COUNCIL ON EDUCATION

J. W. Peltason, *President*

The American Council on Education, founded in 1918, is a council of educational organizations and institutions. Its purpose is to advance education and educational methods through comprehensive voluntary and cooperative action on the part of American educational associations, organizations, and institutions.

The Higher Education Panel is a survey research program established by the Council for the purpose of securing policy-related information quickly from representative samples of colleges and universities. *Higher Education Panel Reports* are designed to expedite communication of the Panel's survey findings to policy-makers in government, in the associations, and in educational institutions across the nation.

The Higher Education Panel's surveys on behalf of the Federal Government are conducted under support provided jointly by the National Science Foundation, the National Endowment for the Humanities, and the U.S. Department of Education (NSF Contract SRS-8117037 and NEH Grant OP-20027-81-2233).

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Financial Support for the Humanities: A Special Methodological Report

Irene L. Gomberg
Frank J. Atelsek

Higher Education Panel Reports
Number 56 January 1983

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Washington, D.C. 20036

This material is based upon research supported by the National Science Foundation under contract #SRS-8117037, and by the U.S. Department of Education and the National Endowment for the Humanities under grant #OP-20027-81-2233. Any opinions, findings, conclusions, or recommendations are those of the authors and do not necessarily reflect the views of the sponsoring agencies.

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The Federal Advisory Board, its Technical Advisory Committee, and the Higher Education Panel Advisory Committee all provided valuable assistance and guidance in solving the unusual problems that arose with the study. We would like to make special mention of our statistical consultant, Joseph Steinberg of Survey Design, Inc., for his advice and recommendations; and Martin Frankel, Chairman of the Federal Advisory Board's Technical Advisory Committee, for preparing the methodology section of this report.

As always, however, our special thanks go to our campus representatives for their continued support of this survey program.

Financial Support for the Humanities: A Special Methodological Report

Background

Since 1971, the American Council on Education has operated the Higher Education Panel, a survey mechanism designed to collect and disseminate data on current policy issues affecting the nation's colleges and universities. The Panel's function is to gather information that is readily accessible but not available from other sources. Consequently, the Panel has enjoyed a high degree of cooperation from its member institutions, with response rates typically reaching 85 percent.

A Panel study proceeds in several phases. A questionnaire is designed and tested, then the survey is mailed in final form to the appropriate Panel institutions. After a predetermined period of time, or when a sufficient response level has been obtained, the field phase is concluded. Survey responses are statistically adjusted to represent the entire population of colleges and universities, and then a descriptive report is written and widely distributed.

The survey upon which this report is based was atypical--it achieved a response rate of only 52 percent even after extraordinary and lengthy follow-up efforts. In light of the difficulty in obtaining these data, it was determined that special methods needed to be employed, both in presenting and interpreting the results. Thus, this document is more a report on methodology than a descriptive analysis of the survey findings.

Sponsor Interest in Financial Data

In June 1981, President Reagan called for the creation of a special Task Force on the Arts and the Humanities and asked it to recommend ways of

increasing private sector support for the arts and humanities. In response to this charge, the National Endowment for the Humanities has begun to assemble information on the financial base of the humanities in the United States.

A Panel survey was needed because existing data sources (e.g., records of the Foundation Center on private giving, studies by the Council for Financial Aid to Education, and the National Center for Education Statistics' higher education finance surveys) do not separate the humanities from other fields of academic activity. The Endowment defines the humanities to include languages, both modern and classical; linguistics; literature; history; jurisprudence; philosophy; archaeology; comparative religion; ethics; and the history, theory, and criticism of the arts. The lack of comprehensive and reliable data about support for the humanities is particularly acute in the area of higher education, where the Endowment's greatest program support has been channeled. This Higher Education Panel survey was to provide the first systematic data on humanities support in higher education.

Description of the Higher Education Panel

The Higher Education Panel provides the basis for a continuing survey research program begun in 1971 by the American Council on Education to conduct specialized surveys on topics of current policy interest to the higher education community and to the federal government. It has been supported principally by a combination of grants and contracts from three federal agencies--currently the National Science Foundation, the U.S. Department of Education, and the National Endowment for the Humanities.

The Panel is a disproportionate stratified sample of 760 colleges and universities drawn from the population of more than 3,000 higher education institutions listed in the National Center for Education Statistics' Education

Directory. All institutions in this population are grouped in terms of the Panel's stratification design, which is based chiefly upon control (public, private), type (university, four-year college, two-year college), and size (full-time-equivalent enrollment). For any given survey, either the entire Panel or an appropriate subset is used.

The survey operation is dependent upon a network of campus representatives at the Panel institutions that (through their presidents) have agreed to participate. The representatives receive the Panel questionnaires and direct them to the most appropriate campus officials for response.

Survey Development

In October 1981, the Panel staff pretested a survey instrument in a matrix format developed by the Endowment that attempted to track the sources and uses of restricted funds expended for the humanities during a one-year period. That is, respondents were asked to trace the use of each dollar of humanities income from each funding source, as depicted in figure 1. (The instructions for completing the draft survey instrument are attached as Appendix A.) The income to be reported in the matrix was to be limited to external funds restricted solely or principally to the humanities.

The pretest revealed two insurmountable obstacles to completing the source-use matrix: (1) Most institutions tend to classify gifts, grants, and contracts by source of funds, not by use; thus, expenditures could not be traced back to their funding source. (2) Not all of the required information was centrally located; therefore, the cooperation of several different offices and departments would be required. This being the case, the larger institutions that receive a sizable amount of restricted humanities support would find it extremely difficult to respond.

Figure 1

American Council on Education
Higher Education Panel Survey No. 56

RESTRICTED SUPPORT FOR THE HUMANITIES
FISCAL YEAR 1980

Line No.	Source / Use	Individuals Alumni (1)	Individuals Non-Alumni (2)	Foundations (3)	Government Federal (4)	Government State/Local (5)	Business (6)	Religious (7)	Foreign (8)	Other (9)
1	Faculty									
2	Research									
3	Museum & Library Collection Acquisition									
4	Museum & Library Cataloging and Preservation									
5	Museum & Library Exhibits									
6	Museum & Library: Other									
7	Curriculum Development and Implementation									
8	Student Support									
9	Scholarly Publication									
10	Public Service Programming									
11	TV/Radio									
12	Capital Expenditures									
13	Other									

Figure 2

OMB# 3145-0009
exp 6/30/84

Humanities includes: language, both modern and classical; linguistics; literature; history; jurisprudence; philosophy; archaeology; comparative religion; ethics; the history, criticism, and theory of the arts (see instructions for more complete definition).

AMERICAN COUNCIL ON EDUCATION

Higher Education Panel Survey No. 56

Financial Support for the Humanities, FY 1980

I. Income Restricted to the Humanities

Please report below, by source, the total amount of gifts, grants, and contracts from government and private sources that were pledged or received during fiscal 1980 RESTRICTED TO THE HUMANITIES:

Source of Funds	Amount Pledged or Received
Individuals:	
(1) Alumni	$
(2) Nonalumni	
(3) Foundations	
Government:	
(4) Federal	
(5) State or local	
(6) Businesses	
(7) Religious organizations	
(8) Foreign governments or organizations	
(9) Other	
(10) Total	$

II. Humanities Expenditures from Restricted and Unrestricted Funds

Please report in Column A below, by use, the total amount of funds expended FOR THE HUMANITIES during fiscal 1980 from *all sources*. Also, for each different expenditure line, *estimate* the proportion of support that was provided by each of the listed funding sources.

Use of Funds	Amount Expended for the Humanities From All Sources (A)	Estimated Percentage of Humanities Support Provided by: Government and Private Support *Restricted to the Humanities* (B)	All Other Government and Private Support[1] (C)	All Other Sources[2] (D)
		[For each line, the sum of columns B, C, and D should equal 100%]		
(1) Humanities instruction	$	100%= ___%	+ ___%	+ ___%
(2) Humanities research		100%= ___	+ ___	+ ___
(3) Humanities libraries: noncapital		100%= ___	+ ___	+ ___
(4) Humanities museums: noncapital		100%= ___	+ ___	+ ___
(5) Humanities graduate student scholarships and fellowships		100%= ___	+ ___	+ ___
(6) Humanities capital expenditures		100%= ___	+ ___	+ ___
(7) Humanities public service and media		100%= ___	+ ___	+ ___
(8) All other humanities expenditures		100%= ___	+ ___	+ ___
(9) Total	$	100%= ___	+ ___	+ ___

[1]Includes gifts, grants and contracts from governmental or private organizations or individuals.
[2]Includes tuition and fees, endowment income, state appropriations, etc.

Thank you for your assistance. Please return this form by April 9, 1982 to:

Higher Education Panel
American Council on Education
One Dupont Circle, N.W.
Washington, D.C. 20036

If you have any questions or problems, please call the HEP staff collect at (202) 833-4757

Please keep a copy of this survey for your records.
Person completing form:

Name _____

Dept _____ Phone _____

As a result of these findings, the survey instrument was revised by separating source dollars from use dollars. Although the requested source information was still to be limited to funds restricted to the humanities, the use information was to include unrestricted as well as restricted funds.

A field test of the revised questionnaire was conducted in January 1982. All of the contacted representatives reported that they could provide good estimates of restricted income, but estimates of certain line item expenditures would be very difficult to provide, as would sources of support for these expenditures. However, in view of the importance of the information to be gathered, the sponsor was hopeful that a large majority of Panel institutions would be willing to cooperate in this unusually demanding survey.

Survey Response

The survey instrument (figure 2; see Appendix B for full instructions and definitions) was mailed on March 17, 1982, to all Panel members except independent medical schools and institutions with no full-time humanities faculty. Although the field test results had suggested there might be a problem with institutions not responding fully or at all, the problem turned out to be more significant than anticipated--chiefly because humanities expenditures were difficult to separate from all expenditures.

By the fourth week after the survey had been mailed--when the response rate for the average HEP survey normally reaches about 50 percent--only 15 percent of the survey group had responded. After two mail follow-ups, completed 10 weeks after the first mailing, the rate rose only to 38 percent (table A). After three telephone follow-up campaigns completed 16 weeks after the first mailing, the rate stood at 50 percent. By the time the field phase was closed and the survey data were processed, usable data had been obtained from 351, or 52 percent, of the 671 institutions in the eligible survey group.

Inasmuch as Panel survey response rates generally reach between 80 and 90 percent, the 52 percent rate was considered unacceptable by Panel standards and evidence of the need for special treatment of this study.

Table A: Cumulative Response Rates at Various Points After Survey Mailout (in percentages)

	Cumulative Response Rate (N=351)
At due date (3.5 weeks)	11
At first mail follow-up (5.5 weeks)	21
At second mail follow-up (9.5 weeks)	37
At first telephone follow-up (10 weeks)	38
At second telephone follow-up (12 weeks)	43
At third telephone follow-up (14 weeks)	46
At close of field phase (18 weeks)	52

There was concern about the possibility that, as a result of repeated follow-up activities, the institutions that responded early were significantly different from the institutions that responded late. Table B compares 251 early survey respondents (from first mailing to the time of the second mail follow-up) with 100 late respondents (from the second mail follow-up to the close of the field phase).

Early responses came from a higher proportion of universities, both public and private; public four-year colleges, both large and small; the larger private four-year colleges; and private two-year colleges. Late responses came from a greater proportion of the smaller private four-year colleges and of the public two-year colleges, large and small. Although a greater proportion of early respondents tended to be the somewhat larger institutions and a greater proportion of the late respondents tended to be smaller, none of the observed differences seems significant enough to warrant any concern.

Table B: Comparison of Early Respondents with Late Respondents

Institution Type		Percentage Distribution of Early Respondents (N=251)	Percentage Distribution of Late Respondents (N=100)
Public universities		21.4	20.0
Private universities		10.8	9.0
Public four-year:	large black	.8	2.0
	large nonblack	14.6	12.0
	medium	7.6	3.0
	small	6.8	3.0
Private four-year:	large	1.2	1.0
	medium	4.8	2.0
	small	5.2	10.0
	smaller	1.6	5.0
Public two-year:	large	3.2	7.0
	medium	5.5	5.0
	small	4.0	8.0
	smaller	5.2	6.0
	smallest	6.0	7.0
Private two-year		1.2	0
Total		100.0	100.0

Methodology

HEP surveys usually remain in the field until an acceptable response rate is obtained. National estimates are then generated, normally using a standard institutional weighting procedure. By this procedure, a weight is calculated, separately for each stratification cell, by dividing the number of institutions in the population by the number of institutions in the Panel that responded to the survey. The appropriate weight is then applied to the responses given by each institution. In this way, Panel survey results represent the entire population of eligible institutions, not just the number that responded.

Weighting of Responses

As mentioned above, only a small number of institutions responded initially to this survey, and even after extensive follow-up efforts, only 52 percent of the institutions in the Panel responded. As a result, point

estimates with corresponding standard errors of estimates cannot be shown as is normally done. In other Panel surveys, when nonrespondents typically account for only 10 or 15 percent of the entire Panel, the assumption is made that for each stratification cell, the nonrespondents are very similar to the respondents. However, in this survey, the nonrespondents are nearly as numerous as the respondents, so to assume such similarity would be unwarranted. Thus, a special weighting process for this survey was deemed necessary. At the recommendation of the Higher Education Panel's Federal Advisory Board, the HEP staff conferred with Joseph Steinberg, the Panel's statistical consultant. He recommended reporting a range of survey results based upon two alternative assumptions about the cause of noncooperation in the survey.

The first assumption was that nonrespondents had little or no humanities activity. In keeping with this minimum-value view, all nonrespondents were treated as if they had returned their survey forms with a response of zero for each item. National estimates were then calculated as if there had been a 100 percent response rate. The resulting estimates indicate the minimum income and expenditure amounts for the humanities in higher education institutions.

The second assumption reflected the conventional approach to weighting. Nonrespondents and respondents were assumed to be very similar within each stratification cell. Therefore, survey responses were adjusted to develop national estimates in two stages. The first stage weighted responses within each cell for institutional nonresponse. The second stage adjusted the Panel data to represent the entire population. This set of illustrative estimates provides a much higher estimate of the financial base of humanities than the first set. Table C shows the weights generated by the two different approaches.

Table C: Stratification Design and Weights

Cell	Description	Population	Panel	Respondents	Conventional Weight	Minimum-Value Weight
01	Public university	112	110	74	1.51	1.02
02	Private university	71	70	36	1.97	1.01
04	Public black four-year (large)	12	11	4	3.00	1.09
05	Public nonblack four-year (large)	100	88	49	2.04	1.14
07	Private four-year (large)	11	10	4	2.75	1.10
08	Public two-year (large)	36	34	15	2.40	1.06
09	Public four-year (medium)	75	41	22	3.41	1.83
10	Public four-year (small)	159	34	20	7.95	4.68
11	Private four-year (medium)	119	38	14	8.50	3.13
12	Private four-year (small)	255	41	23	11.09	6.22
13	Private four-year (smaller)	466	27	9	51.78	17.26
14	Public two-year (medium)	62	36	19	3.26	1.72
15	Public two-year (small)	102	41	18	5.67	2.49
16	Public two-year (smaller)	171	38	19	9.00	4.50
17	Public two-year (smallest)	433	38	22	19.68	11.39
18	Private two-year	197	14	3	65.67	14.07
	Total	(2381)	(671)	(351)		

Response Analysis

The rate of response to this survey varied widely according to different institutional characteristics. As shown in table D, higher-than-average response rates were recorded for the large institutions, particularly the universities (59 percent). Doctoral-granting institutions and public universities had especially high response rates (68 percent and 67 percent, respectively), as did institutions with high enrollments (62 percent of those with more than 10,000 total enrollment, and 64 percent of those with more than 10,000 full-time-equivalent enrollment). Along these lines, respondents accounted for 59 percent of institutions with at least $50 million in educational and general (E&G) expenditures.

Lower-than-average response rates were recorded for the smaller institutions, especially institutions in the private sector (44 percent). Private two-year colleges had the lowest response rate--only 21 percent--and the rate for private four-year colleges was 43 percent. Sorting the respondents according to the Carnegie classes, the liberal arts and specialized

Table D: Comparison of Respondents and Nonrespondents

Characteristic	Respondents (N=351)	Nonrespondents (N=320)	Response Rate
Total	100.0	100.0	52.3
Control			
Public	75.2	65.9	55.6
Private	24.8	34.1	44.4
Type			
University	25.9	20.0	58.7
Four-year college	46.7	47.5	51.9
Two-year college	27.4	32.5	48.0
Type and Control			
Public university	22.1	11.2	67.3
Private university	10.3	10.6	51.4
Public four-year college	27.1	24.7	54.6
Private four-year college	14.2	20.6	43.1
Public two-year college	26.5	29.5	49.7
Private two-year college	.8	3.4	21.4
Carnegie Classification			
Research university	14.2	14.1	52.6
Doctoral-granting institution	15.9	18.2	68.3
Comprehensive college and university	36.2	34.1	53.8
Liberal arts college	5.4	10.0	37.3
Two-year college	27.4	32.5	48.0
Specialized institution	.9	1.2	42.9
Census Region			
East	23.9	26.3	50.0
Midwest	25.6	21.6	56.6
South	31.3	27.6	55.6
West	19.1	24.5	46.2
Total Enrollment			
Less than 2,000	19.9	25.0	46.7
2,000-5,999	30.8	30.9	52.2
6,000-9,999	20.8	24.7	48.0
10,000 or more	28.5	19.4	61.7
Full-Time Equivalent Enrollment			
Less than 2,000	24.5	29.4	47.8
2,000-5,999	33.3	38.4	48.8
6,000-9,999	21.1	19.1	54.8
10,000 or more	21.1	13.1	63.8
Educational and General Expenditures			
Less than $5 million	20.5	22.5	50.0
$5-9.9 million	15.7	20.0	46.2
$10-14.9 million	9.7	12.8	45.3
$15-19.9 million	12.0	10.3	56.0
$20-24.9 million	7.7	6.9	55.1
$25-49.9 million	16.5	13.8	56.9
$50 million or more	18.0	13.8	58.9

institutions had the poorest response rates (37 percent and 43 percent, respectively).

Institutions with fewer than 2,000 students enrolled and with E&G expenditures between $5 million and $15 million also had low response rates (47 percent and about 46 percent, respectively).

Respondents more frequently were publicly controlled, universities, with more than 10,000 students and more than $15 million in E&G expenditures. In contrast, nonrespondents were more apt to be private, two-year or liberal arts colleges, with fewer than 2,000 students and E&G expenditures of less than $15 million.

Credit Hour Comparison

To provide another view of the survey's response pattern, and in order to determine whether respondents had a significantly higher involvement in the humanities than nonrespondents, a comparison was made of each institution's

Table E: Comparison of Respondents and Nonrespondents by Humanities Credit Hours*

Cell	Description	Average Humanities Credit Hours		Humanities Credit Hours as a Percentage of Combined Science, Engineering, and Humanities Credit Hours	
		Respondents	Nonrespondents	Respondents	Nonrespondents
01	Public university	34,579	34,108	24.2	22.8
02	Private university	14,548	39,000	26.7	29.7
04	Public black four-year (large)	7,939	15,172	31.0	29.1
05	Public nonblack four-year (large)	22,955	20,760	26.8	27.3
07	Private four-year (large)	12,844	12,182	36.8	24.0
08	Public two-year (large)	25,038	29,036	28.8	29.1
09	Public four-year (medium)	12,478	10,934	28.4	26.7
10	Public four-year (small)	6,092	6,391	32.2	32.8
11	Private four-year (medium)	9,661	6,788	37.8	33.1
12	Private four-year (small)	4,020	2,732	35.1	33.6
13	Private four-year (smaller)	2,155	2,026	43.3	38.9
14	Public two-year (medium)	13,981	12,384	27.1	29.1
15	Public two-year (small)	11,613	11,064	30.7	30.4
16	Public two-year (smaller)	15,202	7,879	44.9	29.6
17	Public two-year (smallest)	2,052	7,806	30.6	45.7
18	Private two-year	771	1,864	25.1	35.7

*Data taken from Undergraduate Student Credit Hours in Science, Engineering, and the Humanities, Fall 1980, Higher Education Panel Report Number 54, American Council on Education, Washington, D.C., June 1982.

response to a recent Panel survey on student credit hours in the sciences, engineering, and the humanities (HEP Report #54). Credit hours were summed for institutions that responded to the present survey and for institutions that did not respond, separately for each stratification cell. Similarly, credit hours in the humanities were expressed as a percentage of the sum of humanities, science, and engineering credit hours (see table E). The results of such an analysis were inconclusive, inasmuch as no clear pattern of humanities involvement emerged.

A Note of Caution

The wide range of dollar values provided by the two sets of estimates generated by the different weighting methodologies illustrates the great degree of uncertainty that must be considered in using any of the results of this survey. Moreover, since some of the institutional weights are quite large, particularly in the smaller cells, it should be recognized that one data item on one questionnaire could have an exaggerated impact on the results. For example, of the 96 two-year college respondents, only one accounted for 9 of every 10 restricted income dollars from individuals and for more than three-fourths of restricted income from all sources. On a weighted basis, this public two-year college represented more than half the total income estimated by the conventional method and more than two-thirds estimated by the minimum-value method. Thus, this may be the reason that the percentage of restricted income at two-year colleges derived from individuals is so high (see text table G).

It should be noted also that not all institutions provided complete information. Missing values on a questionnaire were replaced by cell averages, and thus in some instances the actual weights are even higher than those listed in table C.

Range of Findings

As stated earlier, the two alternate weighting methodologies produced significant variations in survey findings. The conventional method assumed that nonrespondents were similar to respondents, whereas the minimum-value method assumed that nonrespondents--unlike respondents--had no financial activity in the humanities to report.

There is no sure way of determining where the actual values lie; however, the minimum value estimates can be considered with confidence to be the floor, with the actual values lying somewhere above them. Since the accuracy of the conventional estimates is not known, the minimum-value estimates are provided as a point of reference.

Overall, the dollar estimates generated by the conventional approach were about 85 percent higher that those generated by the minimum-value approach. This differential varied according to the level of response among each of the institutional categories. For example, public institutions had a higher than average response rate and their conventional estimates were about 65 percent higher than their minimum-value estimates. In contrast, private institutions had a lower than average response rate and their conventional estimates were about 120 percent higher.

Interestingly, the two methodologies produced very slight differences in the percentage distribution of dollars. This resulted from two significant factors. First, over 80 percent of the dollars were reported by institutions in the certainty cells (01-08). Furthermore, universities (cells 01 and 02) accounted for 78 percent of all reported income and 62 percent of all reported expenditures. Institutions in the certainty cells are self-representing; that is, <u>all</u> institutions fitting the cell description were asked to participate in

the Panel. In contrast, only a sample of institutions in each of the probability cells (09-18) was asked to participate.

Second, the certainty cells had the lowest weights and the smallest relative differences between their conventional weights and minimum-value weights. Thus, with the large dollar amounts coming from a few cells with low weights, and the small dollar amounts coming from the remaining cells with high weights, the method of calculating the weight--by either conventional or minimum-value method--had no significant impact on the inherent stability of the numbers.

Moreover, this phenomenon suggests that, although the dollar estimates are of uncertain accuracy, it is likely that the percentage distributions are a fairly accurate representation.

Restricted Humanities Income

In part I of the questionnaire, respondents were asked to report, by source, the total amount of gifts, grants, and contracts from government and private sources that were pledged or received during fiscal year 1980 and restricted to the humanities. As shown in table F, the conventional weighting

Table F: Comparison of FY1980 Income Restricted to the Humanities According to Two Weighting Methodologies ($ in 000s)

	Conventional Methodology (C)	Minimum-Value Methodology (MV)	% Difference (C-MV/MV)
All institutions	$245,768	$129,827	89
Public institutions	94,330	57,930	63
Private institutions	151,438	71,897	111
Universities	120,574	70,744	70
Four-year colleges	101,836	50,079	103
Two-year colleges	23,358	9,004	159

process generated a $246 million estimate of restricted humanities income--an amount 89 percent greater than the $130 million estimated by the minimum-value method. Private institutions received three-fifths of all reported income restricted to the humanities, and public institutions, two-fifths. Universities accounted for nearly half of all such funds, and two-year colleges for under one-tenth.

Overall, the federal government provided 4 of every 10 restricted humanities dollars, and individuals (alumni and nonalumni) provided 2 of every 10 dollars (table G). Foundations accounted for 11 percent of the total, state

Table G: Percentage Distribution of Sources of FY1980 Restricted Humanities Income (Conventional Methodology)

Source	Total	Public	Private	Universities	Four-Year	Two-Year
Federal government	39	46	34	46	36	16
Nonalumni	12	8	15	9	9	40+
Alumni	11	10	11	7	10	31+
Foundations	11	7	13	17	5	4
State/local government	7	15	2	6	8	5
Religious organizations	6	*	10	1	14	0
Businesses	6	5	6	6	6	4
Foreign governments	1	3	*	2	1	*
Other	8	7	9	7	11	*
Total	100	100	100	100	100	100

*Less than 0.5 percent
+See cautionary note on page 13.
Note: Totals may not add exactly because of rounding.

and local governments for 7 percent, religious organizations for 6 percent, businesses for 6 percent, foreign governments and organizations for 1 percent, with the remaining 8 percent coming from other sources.

Public institutions had a significantly larger proportion of restricted government support than did private institutions (61 percent vs. 36 percent).

On the other hand, private institutions received a substantially greater proportion of support from foundations and religious organizations (13 percent vs. 7 percent, and 10 percent vs. less than .5 percent, respectively).

These proportions differed also by type of institution. Foundations contributed a sizable share of support to universities (17 percent), whereas religious organizations provided significant support to four-year colleges (14 percent).

Humanities Expenditures

In part II of the survey, institutions were asked to report, by use, the total amount of funds expended for the humanities during fiscal year 1980 from all sources. They were also asked to estimate, for each different type of expenditure, the proportion of support that was provided by restricted government and private support, by all other government and private support, and by all other sources. State appropriations were to be counted under "all other."

As is shown in table H, total humanities expenditures from all sources amounted to $2.9 billion by the conventional procedure and only $1.6 billion by

Table H: A Comparison of FY1980 Humanities Expenditures According to Two Weighting Methodologies ($ in 000s)

	Conventional Methodology (C)	Minimum-Value Methodology (MV)	% Difference (C-MV/MV)
All institutions	$2,904,084	$1,572,127	85
Public institutions	1,958,368	1,149,643	70
Private institutions	945,716	422,484	124
Universities	1,138,207	704,789	61
Four-year colleges	1,274,800	634,352	101
Two-year colleges	491,076	232,986	111

the minimum-value procedure. Public institutions (which enroll about three-fourths of all students) accounted for two-thirds, and private institutions accounted for one-third, of all reported expenditures in the humanities.

The majority of expense was attributable to instructional costs, which accounted for 8 of every 10 dollars spent (see table I). That proportion ranged from 76 percent at the universities and 90 percent at the two-year colleges. Capital expenditures were the next most frequent use of funds, representing 6 percent of all institutions' expenditures for the humanities, but as much as 12 percent of the four-year colleges' expenditures during 1980.

Table I: Percentage Distribution of FY80 Humanities Expenditures From All Sources (Conventional Methodology)

Use	Total	Public	Private	Universities	Four-Year	Two-Year
Instruction	80	82	77	76	80	90
Capital expenditures	6	8	3	1	12	4
Libraries	5	3	7	7	3	3
Research	2	3	2	5	1	*
Fellowships	2	1	4	4	*	0
Public service	1	1	1	1	1	*
Museums	1	1	1	1	*	*
Other	3	2	5	4	3	2
Total	100	100	100	100	100	100

*Less than 0.5 percent
Note: Totals may not add exactly because of rounding.

Only one-tenth of all funds spent for the humanities came from government or private donors. Ninety percent of all support came from tuition and fees, state appropriations, endowment income, and other forms of institutional funding. The variations that occurred among different types of institutions are shown in table J.

Table J: Sources of Support for FY1980 Humanities Expenditures (Conventional Methodology)

	Restricted Government & Private Support	Other Government & Private Support	All Other Support
All institutions	7	3	90
Public institutions	9	2	89
Private institutions	4	4	92
Universities	7	5	88
Four-year colleges	9	2	89
Two-year colleges	4	2	94

Summary

Because of the unusually low response to this Panel survey, two separate weighting methodologies were employed. The first assumed that survey nonrespondents were similar to respondents, and the second assumed that nonrespondents had no financial activity in the humanities to report.

During fiscal year 1980, restricted income for the humanities in the nation's colleges and universities ranged between $130 million and $246 million. Two-fifths of this support came from the federal government, and more than one-fifth came from individuals. Humanities expenditures from all sources ranged between $1.6 billion and $2.9 billion, with instruction accounting for 8 of every 10 dollars spent. Only 10 percent of humanities expenditures were financed by government or private sources.

Detailed Statistical Tables

Table 1

Alternate Estimates of FY 80 Income Restricted to the Humanities, by Source and Institutional Control

(Dollars in Thousands)

Source of Funds	Total (N=2,381)				Public (N=1,262)				Private (N=1,119)			
	Conventional Estimate		Minimum-Value Estimate		Conventional Estimate		Minimum-Value Estimate		Conventional Estimate		Minimum-Value Estimate	
	$	%	$	%	$	%	$	%	$	%	$	%
Alumni	26,063	10.6	13,082	10.1	9,183	9.7	4,893	8.4	16,880	11.1	8,189	11.4
Nonalumni	29,995	12.2	13,561	10.4	7,891	8.4	4,706	8.1	22,104	14.6	8,855	12.3
Foundations	26,393	10.7	14,179	10.9	6,242	6.6	3,940	6.8	20,152	13.3	10,239	14.2
Federal government	95,246	38.8	51,128	39.4	43,489	46.1	27,348	47.2	51,758	34.2	23,780	33.1
State/local governments	16,707	6.8	9,705	7.5	13,915	14.8	8,365	14.4	2,792	1.8	1,340	1.9
Business	13,484	5.5	6,866	5.3	4,559	4.8	2,829	4.9	8,925	5.9	4,038	5.6
Religious organizations	15,400	6.3	8,612	6.6	103	.1	67	.1	15,298	10.1	8,546	11.9
Foreign governments	2,796	1.1	1,784	1.4	2,559	2.7	1,665	2.9	237	.2	119	.2
Other	19,683	8.0	10,909	8.4	6,391	6.8	4,117	7.1	13,292	8.8	6,791	9.4
Total	245,768	100.0	129,827	100.0	94,330	100.0	57,930	100.0	151,438	100.0	71,897	100.0

Note: On this and subsequent tables, numbers may not add exactly to totals because of weighting and rounding.

Table 2

Alternate Estimates of FY 80 Income Restricted to the Humanities, by Source and Institutional Type

(Dollars in Thousands)

Source of Funds	Universities (N=183)				Four-Year Colleges (N=1,197)				Two-Year Colleges (N=1,001)			
	Conventional Estimate		Minimum-Value Estimate		Conventional Estimate		Minimum-Value Estimate		Conventional Estimate		Minimum-Value Estimate	
	$	%	$	%	$	%	$	%	$	%	$	%
Alumni	8,850	7.3	4,816	6.8	9,972	9.8	4,645	9.3	7,241	31.0	3,621	40.2*
Nonalumni	11,115	9.2	6,360	9.0	9,468	9.3	4,409	8.8	9,412	40.3	2,793	31.0*
Foundations	20,106	16.7	11,024	15.6	5,383	5.3	2,808	5.6	904	3.9	347	3.9
Federal government	55,285	45.9	33,102	46.8	36,333	35.7	16,865	33.7	3,628	15.5	1,161	12.9
State/local governments	7,330	6.1	4,607	6.5	8,185	8.0	4,504	9.0	1,193	5.1	594	6.6
Business	6,789	5.6	3,972	5.6	5,780	5.7	2,436	4.9	915	3.9	458	5.1
Religious organizations	710	.6	379	.5	14,690	14.4	8,234	16.4	0	0	0	0
Foreign governments	2,250	1.9	1,484	2.1	514	.5	283	.6	33	.1	17	.2
Other	8,140	6.8	5,000	7.1	11,512	11.3	5,895	11.8	31	.1	14	.2
Total	120,574	100.0	70,744	100.0	101,836	100.0	50,079	100.0	23,358	100.0	9,004	100.0

*See cautionary note on page 13.

Table 3

Alternate Estimates of FY 80 Humanities Expenditures From All Sources, by Use and Institutional Control

(Dollars in Thousands)

Use of funds	Total (N=2,381)				Public (N=1,262)				Private (N=1,119)			
	Conventional Estimate		Minimum-Value Estimate		Conventional Estimate		Minimum-Value Estimate		Conventional Estimate		Minimum-Value Estimate	
	$	%	$	%	$	%	$	%	$	%	$	%
Instruction	2,327,874	80.2	1,254,756	79.8	1,596,600	81.5	934,841	81.3	731,275	77.3	319,915	75.7
Research	72,205	2.5	44,019	2.8	52,575	2.7	34,335	3.0	19,629	2.1	9,684	2.3
Libraries	133,214	4.6	71,410	4.5	65,792	3.4	40,705	3.5	67,422	7.1	30,705	7.3
Museums	16,740	.6	10,043	.6	10,101	.5	6,689	.6	6,639	.7	3,354	.8
Fellowships	55,295	1.9	30,933	2.0	20,165	1.0	13,117	1.1	35,130	3.7	17,815	4.2
Capital expenditures	181,787	6.3	101,009	6.4	154,932	7.9	86,815	7.6	26,855	2.8	14,194	3.4
Public service	29,547	1.0	16,974	1.1	20,237	1.0	12,346	1.1	9,310	1.0	4,628	1.1
Other	87,421	3.0	44,299	2.8	37,966	1.9	21,942	1.9	49,455	5.2	22,357	5.3
Total	2,904,084	100.0	1,572,127	100.0	1,958,368	100.0	1,149,643	100.0	945,716	100.0	422,484	100.0

Table 4

Alternate Estimates of FY 80 Humanities Expenditures From All Sources, by Use and Institutional Type

(Dollars in Thousands)

Use of Funds	Universities(N=183)				Four-Year Colleges (N=1,197)				Two-Year Colleges (N=1,001)			
	Conventional Estimate		Minimum-Value Estimate		Conventional Estimate		Minimum-Value Estimate		Conventional Estimate		Minimum-Value Estimate	
	$	%	$	%	$	%	$	%	$	%	$	%
Instruction	869,687	76.4	546,941	77.6	1,014,722	79.6	498,096	78.5	443,465	90.3	209,719	90.0
Research	58,134	5.1	36,831	5.2	13,737	1.1	7,036	1.1	334	.1	152	.1
Libraries	77,403	6.8	45,589	6.5	38,899	3.1	18,400	2.9	16,912	3.4	7,421	3.2
Museums	14,885	1.3	9,122	1.3	1,696	.1	841	.1	159	*	80	*
Fellowships	49,888	4.4	28,311	4.0	5,407	.4	2,622	.4	0	0	0	0
Capital expenditures	12,228	1.1	6,892	1.0	150,162	11.8	83,871	13.2	19,397	3.9	10,247	4.4
Public service	15,288	1.3	9,592	1.4	12,191	1.0	6,324	1.0	2,069	.4	1,058	.5
Other	40,693	3.6	22,827	3.2	37,987	3.0	17,161	2.7	8,741	1.8	4,310	1.8
Total	1,138,207	100.0	704,789	100.0	1,274,800	100.0	634,352	100.0	491,076	100.0	232,986	100.0

*Less than .05 percent

Table 5

Alternate Estimates of FY80 Humanities Expenditures, by Use and Source: All Institutions (N=2,381)

(Dollars in Thousands)

Use of Funds	Total $	Total %	Restricted Government & Private	All Other Government & Private	All Other
			CONVENTIONAL ESTIMATE		
Instruction	2,327,874	100.0	1.6	1.7	96.7
Research	72,205	100.0	55.8	12.0	32.3
Libraries	133,214	100.0	4.2	4.9	90.9
Museums	16,740	100.0	17.7	12.8	69.5
Fellowships	55,295	100.0	11.4	7.0	81.6
Capital expenditures	181,787	100.0	57.9	5.9	36.1
Public service	29,547	100.0	29.6	13.1	57.3
Other	87,421	100.0	4.8	12.8	82.4
Total	2,904,084	100.0	7.3	3.0	89.7
			MINIMUM-VALUE ESTIMATE		
Instruction	1,254,756	100.0	1.7	1.8	96.5
Research	44,019	100.0	55.7	12.3	32.0
Libraries	71,410	100.0	4.0	4.6	91.4
Museums	10,043	100.0	17.3	12.3	70.4
Fellowships	30,933	100.0	11.9	6.7	81.4
Capital expenditures	101,009	100.0	57.7	5.7	36.6
Public service	16,974	100.0	29.9	12.2	57.9
Other	44,299	100.0	5.9	14.4	79.8
Total	1,572,127	100.0	7.7	3.1	89.3

Table 6

Alternate Estimates of FY80 Humanities Expenditures, by Use and Source: Public Institutions (N=1,262)

(Dollars in Thousands)

Use of Funds	Total $	Total %	Restricted Government & Private	All Other Government & Private	All Other
			CONVENTIONAL ESTIMATE		
Instruction	1,596,600	100.0	1.3	1.6	97.0
Research	52,575	100.0	54.2	13.7	32.0
Libraries	65,792	100.0	2.8	3.7	93.6
Museums	10,101	100.0	17.8	9.9	72.4
Fellowships	20,165	100.0	18.6	3.5	77.9
Capital expenditures	154,932	100.0	67.1	.9	31.9
Public service	20,237	100.0	30.2	10.5	59.3
Other	37,966	100.0	9.5	15.9	74.6
Total	1,950,368	100.0	8.7	2.4	88.9
			MINIMUM-VALUE ESTIMATE		
Instruction	934,841	100.0	1.5	1.8	96.8
Research	34,335	100.0	54.2	13.7	32.2
Libraries	40,705	100.0	2.9	3.5	93.6
Museums	6,689	100.0	17.9	9.5	72.6
Fellowships	13,117	100.0	18.3	3.5	78.2
Capital expenditures	86,815	100.0	66.3	.9	32.8
Public service	12,346	100.0	30.2	10.0	59.8
Other	21,942	100.0	10.5	16.9	72.6
Total	1,149,643	100.0	8.7	2.6	88.8

Table 7

Alternate Estimates of FY80 Humanities Expenditures, by Use and Source: Private Institutions (N=1,119)

(Dollars in Thousands)

Use of Funds	Total $	Total %	Restricted Government & Private	All Other Government & Private	All Other
CONVENTIONAL ESTIMATE					
Instruction	731,275	100.0	2.4	1.8	95.9
Research	19,629	100.0	59.8	7.2	33.0
Libraries	67,422	100.0	5.6	6.1	88.2
Museums	6,639	100.0	17.7	17.3	65.1
Fellowships	35,130	100.0	7.3	9.0	83.7
Capital expenditures	26,855	100.0	4.8	34.7	60.5
Public service	9,310	100.0	28.1	18.8	53.0
Other	49,455	100.0	1.1	10.4	88.5
Total	945,716	100.0	4.3	4.1	91.5
MINIMUM-VALUE ESTIMATE					
Instruction	319,915	100.0	2.6	1.9	95.5
Research	9,684	100.0	61.1	7.5	31.4
Libraries	30,705	100.0	5.6	6.0	88.4
Museums	3,354	100.0	16.1	17.8	66.1
Fellowships	17,815	100.0	7.2	9.0	83.8
Capital expenditures	14,194	100.0	5.0	34.7	60.3
Public service	4,628	100.0	28.8	18.2	53.0
Other	22,357	100.0	1.4	11.8	86.8
Total	422,484	100.0	4.7	4.6	90.7

Table 8

Alternate Estimates of FY80 Humanities Expenditures, by Use and Source: Universities (N=183)

(Dollars in Thousands)

Use of Funds	Total $	Total %	Restricted Government & Private	All Other Government & Private	All Other
CONVENTIONAL ESTIMATE					
Instruction	869,687	100.0	2.6	2.5	94.9
Research	58,134	100.0	57.0	12.4	30.6
Libraries	77,403	100.0	5.0	3.7	91.3
Museums	14,885	100.0	16.1	11.7	72.2
Fellowships	49,888	100.0	11.2	7.1	81.7
Capital expenditures	12,228	100.0	3.0	53.1	43.8
Public service	15,288	100.0	35.7	10.3	54.0
Other	40,693	100.0	6.5	19.9	73.5
Total	1,138,207	100.0	6.7	4.7	88.6
MINIMUM-VALUE ESTIMATE					
Instruction	546,941	100.0	2.6	2.5	94.9
Research	36,831	100.0	56.4	12.6	31.1
Libraries	45,589	100.0	4.8	3.5	91.7
Museums	9,122	100.0	16.5	11.1	72.4
Fellowships	28,311	100.0	12.0	6.7	81.3
Capital expenditures	6,892	100.0	3.0	48.5	48.5
Public service	9,592	100.0	35.0	9.4	55.6
Other	22,827	100.0	7.8	20.3	71.9
Total	704,789	100.0	6.7	4.5	89.0

Table 9

Alternate Estimates of FY80 Humanities Expenditures, by Use and Source: Four-Year Colleges (N=1,197)

(Dollars in Thousands)

Use of Funds	Total $	Total %	Restricted Government & Private	All Other Government & Private	All Other
CONVENTIONAL ESTIMATE					
Instruction	1,014,722	100.0	1.4	1.0	97.6
Research	13,737	100.0	50.4	10.4	39.1
Libraries	38,899	100.0	3.7	5.3	91.0
Museums	1,696	100.0	33.4	23.5	43.1
Fellowships	5,407	100.0	13.9	6.0	80.1
Capital expenditures	150,162	100.0	59.3	2.8	37.9
Public service	12,191	100.0	24.4	16.6	59.0
Other	37,987	100.0	4.0	7.8	88.2
Total	1,274,800	100.0	9.2	1.9	88.9
MINIMUM-VALUE ESTIMATE					
Instruction	498,096	100.0	1.4	1.1	97.5
Research	7,036	100.0	52.0	11.3	36.7
Libraries	18,400	100.0	3.3	4.7	92.0
Museums	841	100.0	27.7	26.0	46.3
Fellowships	2,622	100.0	11.5	5.9	82.6
Capital expenditures	82,871	100.0	59.2	2.8	38.0
Public service	6,324	100.0	24.5	16.4	59.1
Other	17,161	100.0	4.9	9.6	85.5
Total	634,352	100.0	10.1	2.0	87.9

Table 10

Alternate Estimates of FY80 Humanities Expenditures, by Use and Source: Two-Year Colleges (N=1,001)

(Dollars in Thousands)

Use of Funds	Total $	Total %	Restricted Government & Private	All Other Government & Private	All Other
CONVENTIONAL ESTIMATE					
Instruction	443,465	100.0	0.4	1.6	98.1
Research	334	100.0	58.9	.1	41.0
Libraries	16,912	100.0	1.8	9.4	88.8
Museums	159	100.0	1.2	0	98.8
Fellowships	0	0	0	0	0
Capital expenditures	19,397	100.0	81.8	.3	17.9
Public service	2,069	100.0	14.9	13.4	71.7
Other	8,741	100.0	*	1.3	98.7
Total	491,076	100.0	3.7	1.8	94.4
MINIMUM-VALUE ESTIMATE					
Instruction	209,719	100.0	0.2	1.7	98.1
Research	152	100.0	58.0	.2	41.8
Libraries	7,421	100.0	1.2	11.2	87.7
Museums	80	100.0	1.3	0	98.7
Fellowships	0	0	0	0	0
Capital expenditures	10,247	100.0	81.8	.3	17.9
Public Service	1,058	100.0	14.9	13.3	71.8
Other	4,310	100.0	*	1.5	98.5
Total	232,986	100.0	3.9	2.0	94.1

*Less than 0.05 percent

Appendix A: Pretest Instructions

American Council on Education
Higher Education Panel Survey No. 56:

RESTRICTED SUPPORT FOR THE HUMANITIES
PRETEST
INSTRUCTIONS AND DEFINITIONS

1. This survey is intended to record only external support, defined here as all revenues generated outside the institution, its affiliated branches, institutes, and research centers. External support includes: government grants and contracts; private gifts, grants, and contracts; bequests; special trusts; and government appropriations which are non-recurring and restricted in purpose. External support does not include: tuition and fees; endowment income; sales and services of educational activities; sales and services of auxiliary enterprises; sales and services of hospitals; and recurring, unrestricted government appropriations.

2. Only funds received by or pledged to the institution during fiscal year 1980 should be recorded. Fiscal year is defined here as that twelve-month period which the institution normally employs for financial reporting and record-keeping.

3. Only those funds should be recorded which have been restricted entirely or primarily for activities in the humanities. Restricted funds are defined here as externally-generated funds given the institution with specific conditions attached by the grantor regarding their use. Funds are considered to have been used to support the humanities if their restriction refers to or is primarily concerned with one or more of the following fields of study: language, either modern or ancient; linguistics; literature, history; jurisprudence (legal theory rather than professional law study); philosophy; anthropology; archaeology; comparative religion; history and philosophy of religion; ethics; the history, criticism, and theory of the arts; American studies; history and philosophy of science; ethnic and women's studies, and political theory.

4. An award should be recorded under the "Use" category which most closely corresponds to its primary intended purpose.

5. Funds recorded should be received or pledged in fiscal year 1980, but need not be expended in that year. Similarly, funds generated in 1980 from a gift, grant, or contract made previously should not be recorded.

   For example:

   - In 1973, a bequest of $500,000 was left to the university for the purpose of endowing a chair of philosophy. Interest from the original bequest continued, in 1980, to support the chair. The interest accrued should not be recorded for 1980.

- In 1980, a four-year $400,000 grant for archaeological research was made to the college, from which $100,000 per year could be drawn through 1983. The entire $400,000 should be recorded for 1980.

- In 1980, an irrevocable pledge of $10,000 was made to the university for the purpose of purchasing books on German literature for the library. The money would not be available until the death of the donor and the execution of his will. The entire $10,000 should be recorded for 1980.

6. Revocable bequests should not be recorded.

Notes on Sources and Uses of Support

SOURCES OF SUPPORT

Column 1 Individuals: Alumni

Persons, living or deceased, who have attended or earned a degree from the institution.

Column 2 Individuals: Non-alumni

All other persons, living or deceased.

Column 3 Foundations

A foundation is defined by the Foundations Center's Foundation Directory (New York: 1979, p. ix) as:

> "non-governmental, non-profit organizations with funds (usually from a single source, either an individual, a family or a corporation) and programs managed by its own trustees or directors established to maintain or aid social, educational, charitable, religious or other activities serving the common welfare, primarily through the making of grants."

Note that corporate foundations are included in this category. Foreign foundations should be entered in Column 8.

Column 4 Government: Federal

Departments, agencies, and offices of the U.S. Federal government and the Armed Forces, including the National Endowment for the Humanities, state humanities committees (affiliated with NEH), the National Science Foundation, the National Historic Publications and Records Commission, the Institute for Museum Services, the Department of Education, etc.

Column 5 Government: State and Local

All other U.S. governmental units below the Federal level, including county, regional, and municipal bodies.

Column 6 Business

U.S. profit-making companies, corporations, and firms. Grants or gifts from corporate foundations should be entered in Column 3, "Foundations."

Column 7 Religious

Organizations in the U.S. affiliated with a religious denomination, or of a predominantly religious character. Do not include "contributed services" in the form of salaries from religious faculty who receive less than full salary.

Column 8 Foreign

Any government, foundation, corporation, or organization of a foreign country.

Column 9 Other

Includes various professional, philanthropic, civic and public service, and other organizations. Some examples are: The United Negro College Fund; U.S. Chamber of Commerce; United Way; service clubs; and educational and scholarly associations.

USES OF SUPPORT

Line 1 Faculty

All forms of support for an individual faculty member, including endowed chairs, fellowships, visiting professorships, summer research grants, sabbaticals, grants for participation in or travel to conferences and seminars, etc.

Line 2 Research Projects

Collaborative, on-going, or interdisciplinary projects of research in the humanities. Support for the planning and conduct of scholarly conferences and for humanities research institutes should be included. Also, include here support for the editing of scholarly works or other non-publishing activities related to the preparation of scholarly materials.

Line 3 Museum and Library Collection Acquisition

Acquisition of books, periodicals, audio-visual materials, manuscripts, works of art, cultural artifacts, etc. for museums or libraries. Support for such acquisitions should be listed only if the restrictions specify the humanities nature of the objects to be acquired, or if the museum or library which will receive them is of a predominantly humanities orientation. Donated objects should be assigned a fair market value.

Line 4 Museum and Library Cataloging and Preservation

The organization, cataloging, computerization, conservation, and preservation of museum or library collections.

Line 5 Museums and Library Exhibits

The design and installation of humanities exhibits in museums or libraries.

Line 6 Museum and Library: Other

Support for personnel, personnel development, capital expenditures and general support, and public service or educational programming in museums or libraries.

Line 7 Curriculum Development and Implementation

Support for developing new courses, modifying existing courses, revising curricula, and implementing new curricula at undergraduate, graduate, continuing, and elementary and secondary levels.

Line 8 Student Support

Support for research, prizes, scholarships, fellowships, and other humanities-related activities by undergraduate and graduate students.

Line 9 Scholarly Publication

Subvention of university presses, and title subsidies.

Line 10 Public Service Programming

Activities intended to provide non-instructional programs and services to primarily non-academic groups external to the institution. Seminars, lectures, film series, conferences, workshops, and cooperative extension services would be included.

Line 11 TV/Radio

Script and program development, program acquisition, and other electronic media costs related to the humanities. Development of programs for courses in higher education, continuing education, or elementary/secondary institutions should be listed in Line 7.

Line 12 Capital Expenditures

Renovation and construction of physical plant devoted primarily to the humanities, and acquisition of major facilities (e.g., computer systems, automated language teaching labs) for humanities teaching or research. Capital expenditures for libraries or museums should be reported in Line 6.

Line 13 Other

NEH Challenge Grants and the related matching gifts should be included here unless it is possible to apportion the award among other "use" categories.

Appendix B: Survey Instructions

AMERICAN COUNCIL ON EDUCATION
ONE DUPONT CIRCLE
WASHINGTON, D. C. 20036

March 17, 1982

HIGHER EDUCATION PANEL
(202) 833-4757

Dear Higher Education Panel Representative,

Attached is Higher Education Panel survey #56, "Financial Support for the Humanities, FY1980." Sponsored by the National Endowment for the Humanities, the survey seeks information on the amounts, sources, and uses of funds for the humanities.

In June 1981, President Reagan called for the creation of a special Task Force on the Arts and Humanities, and he directed it to recommend "methods to increase private support for the arts and humanities." The National Endowment for the Humanities is responding to the President's initiative by developing data on the financial base of the humanities in the United States. These data are intended for use as a resource for planning by the Endowment, philanthropic organizations, and humanities institutions.

The lack of systematic and reliable data on support for the humanities is most acute in the area of higher education, where the greatest portion of Endowment-supported programs is housed. This information is important in aiding the Endowment to better allocate funds among its programs, as well as to direct private foundations and corporations where the greatest program needs lie.

According to the field test, most institutions will be able to provide the requested information from their business and development offices. However, as usual, we leave that judgment to you.

Please understand that your institution's response will be protected to the maximum extent permissible by law. As with all our surveys, the data you provide will be reported in summary fashion only and will not be identifiable with your institution. This survey is authorized by the National Science Foundation Act of 1950, as amended. Although you are not required to respond, your cooperation is needed to make the results comprehensive, reliable, and timely.

Please return the completed questionnaire to us by April 9, 1982. A preaddressed envelope is enclosed for your convenience. If you have any questions or problems, please do not hesitate to telephone us collect at (202)833-4757.

Thank you for your cooperation and assistance.

Sincerely,

Frank J. Atelsek

Frank J. Atelsek
Panel Director

AMERICAN COUNCIL ON EDUCATION

Higher Education Panel Survey No. 56:
Financial Support for the Humanities, FY 1980
Additional Instructions and Definitions

"HUMANITIES" includes the following fields of study: language, both modern and classical; linguistics; literature; history (including history of science); jurisprudence (the theory, history, and philosophy of law, rather than professional legal study); philosophy (including philosophy of science); archaeology; comparative religion; ethics; the history, criticism, and theory of the arts (excluding performing arts); and those disciplines and interdisciplinary programs which are humanistic in content or method (such as anthropology, American studies, and ethnic and women's studies). However, if a humanities department includes programs not listed above (e.g., composition, grammar), include the entire department.

SECTION I: Income Restricted to the Humanities

Only those funds should be reported which have been restricted entirely or primarily to activities in the humanities. Restricted funds are defined here as externally generated funds given the institution with specific conditions attached by the grantor regarding their use.

Only funds received by or pledged to the institution during fiscal year 1980 (1979-80) should be reported. Fiscal year is defined here as that twelve-month period which the institution normally employs for financial reporting and record-keeping.

Funds reported should be received or pledged in fiscal year 1980, but need not be expended in that year. Similarly, funds generated in 1980 from a gift, grant, or contract made previously should not be reported.

For example:

- In 1980, a four-year $400,000 grant for archaeological research was made to the college, from which $100,000 per year could be drawn through 1983. The entire $400,000 should be reported for 1980.
- In 1980, an irrevocable pledge of $10,000 was made to the university for the purpose of purchasing books on German literature for the library. The money would not be available until the death of the donor and the execution of his will. The entire $10,000 should be reported for 1980.
- In 1973, a bequest of $500,000 was left to the university for the purpose of endowing a chair of philosophy. Interest from the original bequest continued, in 1980, to support the chair. The interest accrued should not be reported for 1980.

SECTION II: Humanities Expenditures from Restricted and Unrestricted Funds

Whereas Section I asks for the amount of *income* restricted to the humanities, Section II Column A asks for the amount of *expenditures* from all sources for the humanities. Therefore, the dollars reported in Section I are not likely to be the same as those reported in Section II.

Only funds expended by the institution during fiscal year 1980 (1979-80) should be reported.

Only direct expenditures should be reported. If your institution's accounting system includes indirect charges, please *estimate* the share that is direct and report only that figure.

Use of Funds Definitions

Line 1 *Humanities Instruction*
Expenditures of humanities colleges, schools, and departments should be included in line 1. Include expenditures for both credit and noncredit activities. Include expenditures for endowed chairs, visiting professorships, and sabbaticals, as well as support for regular instructional staff. Also include expenditures for departmental research which are not separately budgeted.

Line 2 *Humanities Research*
Projects of externally commissioned or separately budgeted research in the humanities, either individual or collaborative. Include expenditures for: scholarly conferences, humanities research institutes, faculty research grants, and faculty travel to scholarly meetings.

Line 3 *Humanities Libraries: noncapital*
If the institution includes specialized libraries whose collections and activities are predominantly in the humanities, their total expenditures should be reported. For general-purpose libraries, the amount of overall expenditures which were for acquisitions, preservation, cataloging, personnel, and programming in the humanities should be estimated. Capital expenditures for humanities libraries should be reported in line 6.

Line 4 *Humanities Museums: noncapital*
If the institution includes specialized museums whose collections and activities are predominantly in the humanities, their total expenditures should be reported. For other museums, the amount of overall expenditures which were for acquisitions, preservation, cataloging, personnel, and programming in the humanities should be estimated. Capital expenditures for humanities museums should be reported in line 6.

Line 5 *Humanities Graduate Student Scholarships and Fellowships*
Includes grants, stipends, and other forms of support for students engaged in postbaccalaureate study at the institution. Undergraduate student support should be reported in line 8, "All other humanities expenditures," and assistantships should be reported in line 1, "Humanities instruction."

Source of Funds Definitions

Line 1 *Individuals: Alumni*
Persons, living or deceased, who have attended or earned a degree from the institution.

Line 2 *Individuals: Nonalumni*
All other persons, living or deceased.

Line 3 *Foundations*
A foundation is defined by the Foundation Center's *Foundation Directory* (New York: 1979, p. ix) as:

> "non-governmental, non-profit organizations with funds (usually from a single source, either an individual, a family or a corporation) and programs managed by its own trustees or directors established to maintain or aid social, educational, charitable, religious or other activities serving the common welfare, primarily through the making of grants."

Note that corporate foundations are included in this category. Foreign foundations should be entered in line 8.

Line 4 *Government: Federal*
Departments, agencies, and offices of the U.S. Federal government and the Armed Forces, including the National Endowment for the Humanities, state humanities committees (affiliated with NEH), the National Science Foundation, the National Historic Publications and Records Commission, the Institute for Museum Services, the Department of Education, etc.

Line 5 *Government: State and Local*
All other government units below the Federal level, including county, regional, and municipal bodies.

Line 6 *Businesses*
U.S. profit-making companies, corporations, and firms. Grants or gifts from corporate foundations should be entered in line 3, "Foundations."

Line 7 *Religious Organizations*
Organizations in the U.S. affiliated with a religious denomination, or of a predominantly religious character. Do not include "contributed services" in the form of salaries from religious faculty who receive less than full salary.

Line 8 *Foreign Governments or Organizations*
Any government, foundation, corporation, or organization of a foreign country.

Line 9 *Other*
Includes various professional, philanthropic, civic and public service, and other organizations. Some examples are: The United Negro College Fund, U.S. Chamber of Commerce, United Way, service clubs, and educational and scholarly associations.

Line 6 *Humanities Capital Expenditures*
Renovation and construction of physical plant devoted primarily to the humanities, and acquisition of major facilities (e.g., computer systems, automated language teaching labs) for humanities teaching.

Line 7 *Humanities Public Service and Media*
Activities intended to provide noninstructional programs and services to primarily nonacademic groups external to the institution. Seminars, lectures, film series, conferences, workshops, and cooperative extension services would be included. Also include script and program development, program acquisition, and other electronic media costs related to the humanities. Development of programs for courses in higher education, continuing education, or elementary/secondary institutions should be listed in line 8, "All other humanities expenditures."

Line 8 *All Other Humanities Expenditures*

If you have any questions or problems, please call the HEP staff collect at (202) 833-4757

Other Reports of the Higher Education Panel
American Council on Education

Atelsek, Frank J. and Gomberg, Irene L. **Bachelor's Degrees Awarded to Minority Students, 1973-74.** Higher Education Panel Report, No. 24, January, 1977.

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Atelsek, Frank J. and Gomberg, Irene L. **Recruitment and Retention of Full-Time Engineering Faculty, Fall 1980,** Higher Education Report No. 52, October 1981.

Andersen, Charles J. and Atelsek, Frank J. **Sabbatical and Research Leaves in Colleges and Universities,** Higher Education Panel Report No. 53, February 1982.

Atelsek, Frank J. and Andersen, Charles J. **Undergraduate Student Credit Hours in Science, Engineering, and the Humanities, Fall 1980,** Higher Education Panel Report No. 54, June 1982.

Andersen, Charles J. and Atelsek, Frank J. **An Assessment of College Student Housing and Physical Plant,** Higher Education Panel Report No. 55, October 1982.

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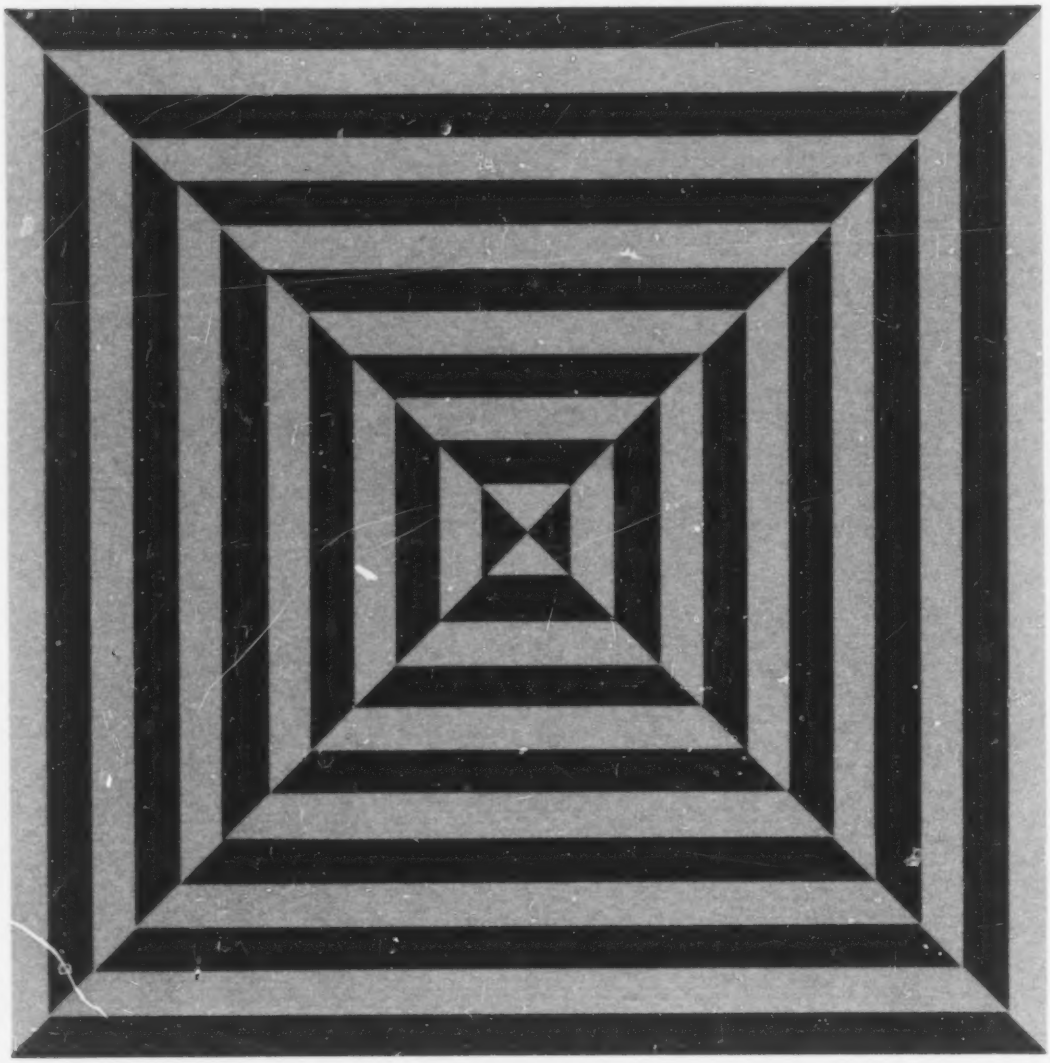
NEUROSCIENCE PERSONNEL AND TRAINING

Irene L. Gomberg and Frank J. Atelsek



HIGHER EDUCATION PANEL REPORT NUMBER 57
AMERICAN COUNCIL ON EDUCATION

JUNE
1983

A Survey Funded by the National Science Foundation, the U.S. Department of Education, and the National Endowment for the Humanities

AMERICAN COUNCIL ON EDUCATION

J. W. Peltason, President

The American Council on Education, founded in 1918, is a council of educational organizations and institutions. Its purpose is to advance education and educational methods through comprehensive voluntary and cooperative action on the part of American educational associations, organizations, and institutions.

The Higher Education Panel is a survey research program established by the Council for the purpose of securing policy-related information quickly from representative samples of colleges and universities. *Higher Education Panel Reports* are designed to expedite communication of the Panel's survey findings to policy-makers in government, in the associations, and in educational institutions across the nation.

The Higher Education Panel's surveys on behalf of the Federal Government are conducted under support provided jointly by the National Science Foundation, the National Endowment for the Humanities, and the U.S. Department of Education (NSF Contract SRS-8117037 and NEH Grant OP-20027-81-2233).

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Neuroscience Personnel and Training

Irene L. Gomberg

Frank J. Atelsek

Higher Education Panel Reports

Number 57 June 1983

American Council on Education
Washington, D.C. 20036

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The Higher Education Panel Advisory Committee and the Federal Advisory Board and its Technical Advisory Committee also contributed to this effort.

We are especially appreciative of the efforts of our Panel representatives and the neuroscience coordinators on the participating campuses who made this study possible.

Highlights

- In fall 1981, there were 188 Ph.D.-granting institutions of higher education with neuroscience training programs. Nearly three-fifths offer neuroscience training within traditional departments, where the Ph.D.'s awarded are in traditional fields with a specialization in neuroscience. Almost one-third offer training through interdepartmental programs. Only 3 percent have departments of neuroscience.
- Just over 3,400 full-time neuroscience faculty were at these colleges and universities in fall 1981. Sixty-five percent were at public institutions, and of these, 74 percent were tenured. At private institutions, 57 percent were tenured.
- The number of neuroscience faculty grew 8 percent between fall 1980 and fall 1981, but was expected to increase by only 1 percent between 1981 and 1982. Declines in faculty growth rates for all types of institutions were expected, except for medical schools and the top 50 institutions in terms of research and development expenditures.
- Faculty vacancies in the neurosciences amounted to 4 percent of full-time neuroscience faculty in fall 1981. Fewer than 1 percent of the faculty were expected to retire in 1982-83.
- Postdoctorate trainees increased by 5 percent from 1980 to 1981, but a decline of 2 percent was projected from 1981 to 1982.
- The number of graduate students grew 4 percent from 1980 to 1981, but a very slight decrease was expected between 1981 and 1982.
- In fall 1981, 9 percent of graduate students and 20 percent of postdoctorate trainees in neuroscience programs were foreign citizens.

- The principal areas of neuroscience training and research were physiology anatomy, and psychology/behavioral sciences.
- The number of doctorates awarded in neuroscience programs was 516 in 1980-81 and 490 in 1981-82. In 1982-83, nearly 600 doctorates were expected to be awarded.
- The duration of graduate study in the neurosciences averaged about five years at the majority of institutions. Postdoctorate training periods typically lasted two years.
- Over 40 percent of institutions reported a market balance between postdoctorate trainees and available positions. In contrast, 75 percent of institutions were of the opinion that there was an oversupply of neuroscientists for available full-time employment.

Background

Research and training in neuroscience has burgeoned over the past decade, involving scientists from disciplines as diverse as physiology, psychology, biochemistry, and genetics. Because of the interdisciplinary nature of the neuroscience field, it has been nearly impossible to assess accurately the growth of its capabilities and needs.

It is widely recognized that the number of scientists working in the field has increased, as has the number of formal training programs. However, a quantitative assessment of the current status of the neuroscience field is critical if federal policy is to stay abreast of its growth and needs for further development.

A first step in this direction was the formation in July, 1981, of the federal Interagency Working Group in Neuroscience to exchange perspectives on federal support of neuroscience research and training. Because of the dearth of available information about the personnel and training in the neurosciences, the National Science Foundation proposed the present survey. Its objectives were: (1) to clarify the nature of the administrative structures that provide graduate neuroscience training at doctorate-granting institutions; (2) to determine the number of faculty, research doctorates, graduate students, and postdoctorate trainees in neuroscience programs for a recent three-year period; and, (3) to obtain the opinions of neuroscience experts regarding changes in manpower and training, the areas of concentration in training and research, and the market for postdoctorate training and employment in neuroscience.

Methods Summary

The Higher Education Panel forms the basis of a continuing survey research program created in 1971 by the American Council on Education. Its purpose is to conduct surveys on topics of current policy interest to the higher education community and to government agencies.

The Panel is a disproportionate stratified sample of 760 colleges and universities drawn from the population of more than 3,000 institutions listed in the National Center for Education Statistics' Education Directory. All institutions in the population are grouped according to the Panel's stratification design, which is based upon institution type (university, four-year college, two-year college), control (public, private), and size (full-time-equivalent enrollment). For any given survey, either the entire Panel or an appropriate subgroup is used.

The survey operation is dependent upon a network of campus representatives at the Panel institutions that (through their presidents) have agreed to participate. The representatives receive the Panel questionnaires and direct them to the most appropriate campus officials for response.

A field test of the survey instrument was conducted in mid-March 1982. Panel representatives on selected campuses were asked to provide their comments and suggestions, and prospective respondents were asked to complete the survey fully and note any problem areas. The questionnaire was revised accordingly.

The final survey instrument (see Appendix A) was mailed on June 21, 1982, to the Ph.D.-granting institutions in the Panel which were thought to offer neuroscience programs. Through information from the National Science Foundation, and through institutional self-reporting, a total of 181 eligible Panel institutions ultimately were identified as offering doctorate-level programs in the neurosciences. Further, though not members of the Panel, seven other

institutions in the population were identified as having neuroscience activity and were included in the study at the request of the sponsor. Thus, this was a population, rather than a sample, survey.

Along with the survey instructions, most Panel representatives were given the names of specific neuroscience "coordinators" recommended by the sponsor to direct the survey effort on their campuses. Where no particular coordinator was recommended, the Panel representative selected the most appropriate respondent. The involvement of someone in addition to the campus representative is unusual for a Panel survey; however, it was considered particularly valuable in view of the interdisciplinary, interdepartmental nature of neuroscience activity.

By the October 25 close of the field phase, after mail and telephone follow-up efforts, usable data had been received from 174 institutions, for a response rate of 93 percent. Data from responding institutions were statistically adjusted to represent the national population of 188 colleges and universities with doctorate-level programs in the neurosciences. Institutional weights were computed separately for each stratum, based upon the ratio of the number of institutions in the population to the number of institutions that responded.

Appendix B presents the stratification design used to produce the national estimates, and a comparison of respondents and nonrespondents according to various institutional characteristics.

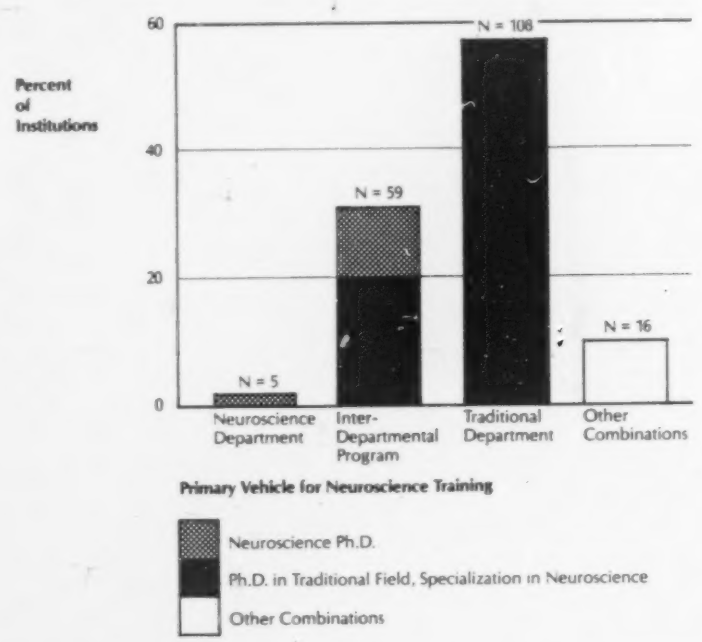
Findings

Survey respondents were asked to provide basic information about their institutions' neuroscience programs: the type of organizational structure, the numbers of students and faculty involved in training and research, major areas of concentration, and opinions of the market for neuroscientists.

Administrative Structure

Training programs in the neurosciences presently exist in 188 Ph.D.-granting institutions. The administrative structures of these programs offer some insight into the complexity of neuroscience as a discipline. As shown in figure 1, only five institutions have as their primary neuroscience training program a separate, independent department offering a Ph.D. in neuroscience.

FIGURE 1
Organization of Primary Neuroscience Training Programs in All Institutions, 1981-82



Six of every 10 institutions offer neuroscience training through a traditional department, and 3 of every 10 offer such training through an interdepartmental program. It is interesting to note that in most cases (77 percent), the doctorate is awarded in a traditional discipline with a specialization in neuroscience. The Ph.D. is awarded specifically in neuroscience only within the freestanding departments of neuroscience and within one of every three interdepartmental programs.

More than one-fourth of all institutions reported offering additional neuroscience training programs distinct from the ones they regarded as primary (see detailed tables 4 and 5).

The ties to traditional departments in neuroscience training overall are quite strong. They are strongest in institutions that have only graduate school programs (with 63 percent of primary training occurring in traditional departments), and less strong in comprehensive institutions--those that offer both medical school and graduate school training (48 percent; figure 2).[1] Also, freestanding neuroscience departments occur only in comprehensive institutions.

Among the top 20 institutions ranked according to federally funded R & D expenditures in the biological sciences (1980), an interesting shift occurs: interdepartmental programs provide the greatest share of primary neuroscience training (55 percent), with traditional departments accounting for only 25 percent.

The Faculty and Staff

The survey obtained information about the characteristics of the full-time faculty participating in neuroscience programs, including their number, tenure status, position vacancies, and expected retirements.

Overall, as of fall 1981, the full-time faculty numbered more than 3,400 persons, with almost two of every three affiliated with neuroscience programs at public institutions (figure 3). Tenure status had been achieved by 68 percent of all faculty, with the proportion tenured much higher at public institutions (74 percent) than at private institutions (57 percent).

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[1]Three different types of institutions are referred to throughout this report: (1) "graduate school only," institutions that offer graduate but not medical school training; (2) "medical school only," institutions that offer medical but not graduate school training; and (3) "comprehensive," institutions that offer both graduate and medical school training.

FIGURE 2
Organization of Primary Neuroscience Training Programs by Type of Institution, 1981-82

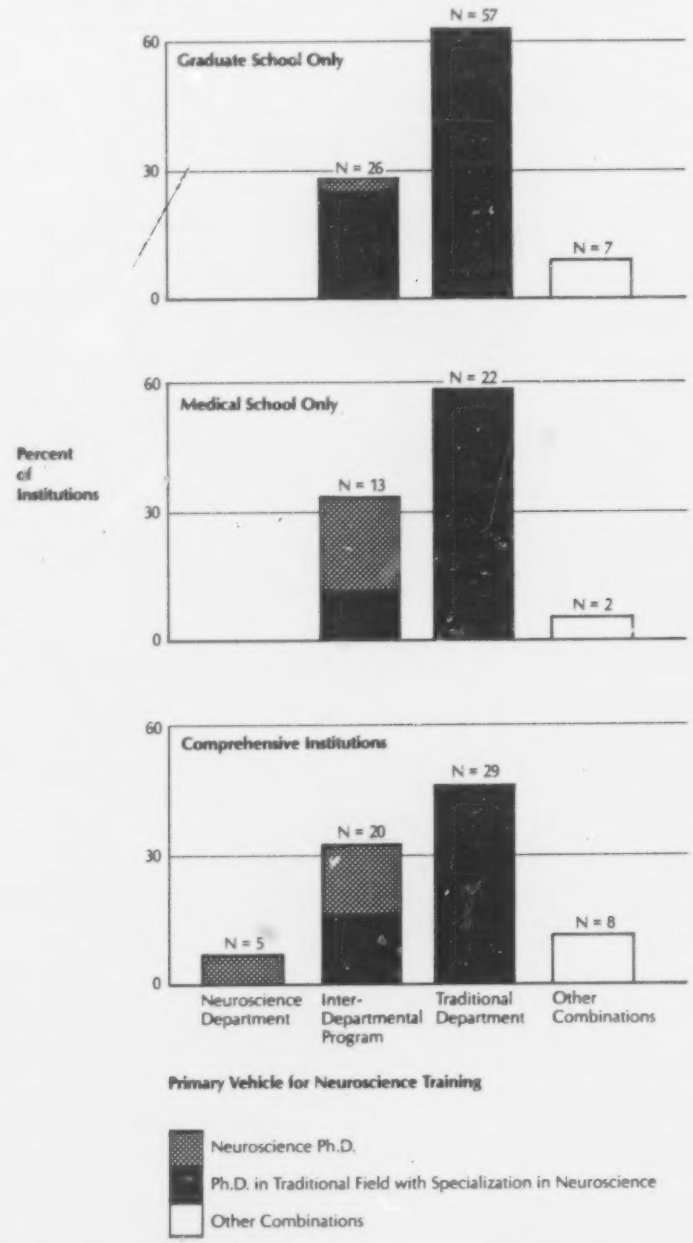
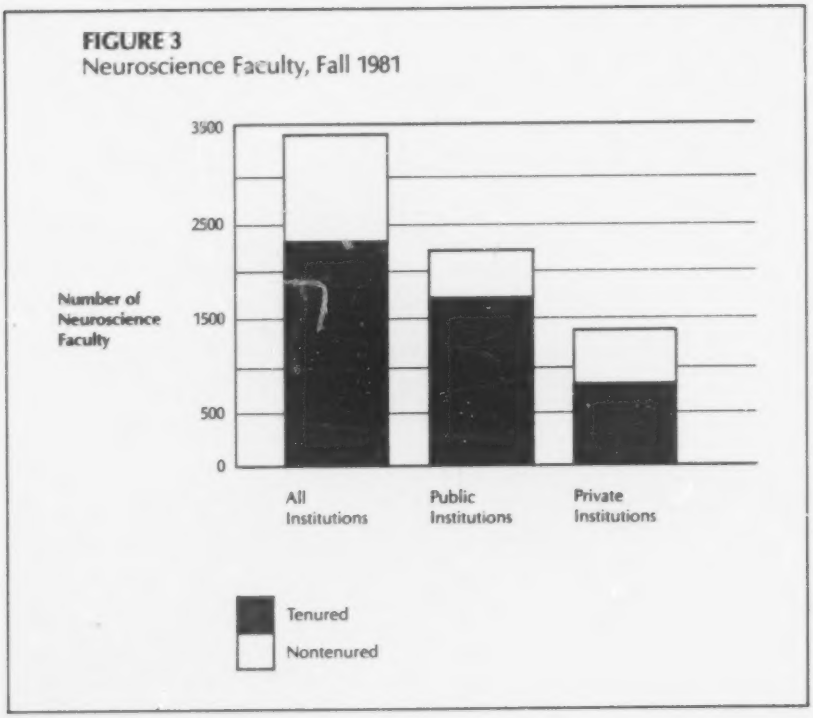


FIGURE 3
Neuroscience Faculty, Fall 1981



Vacancies among full-time neuroscience faculty totaled only 4 percent in fall 1981 (141 faculty positions). The vacancy rate did not differ greatly by control or type of institution, or by extent of research and development funding (table A). Faculty turnover due to retirement was expected also to be minimal. Thirty-two retirements were expected in academic year 1982-83, or about 1 percent of the faculty pool. As projected by the survey respondents, retirements from medical school neuroscience programs were to be especially few (only 3 of the 762 faculty members).

In fall 1981, almost 400 nonfaculty research doctorates were working in the neuroscience programs, exclusive of postdoctorate trainees. They were outnumbered by full-time faculty members by about 9 to 1. Table B summarizes the distribution of the research doctorate staff relative to the faculty in neuroscience programs.

Table A

Neuroscience Faculty Vacancies and Expected Retirements

	Vacancies (Fall 1981)	Expected Retirements (AY 1982-83)
Total number	141	32
As a percent of total faculty	4	1
By control		
Public	4	1
Private	5	1
By type		
Graduate school only	5	1
Medical school only	5	*
Comprehensive	4	1
By R & D funding		
Top 50	3	1
All others	5	1

*Less than .5 percent.

Table B

Faculty per Nonfaculty Research Doctorate, Fall 1981

	Ratio
Total	9
Control	
Public	9
Private	7
Type	
Graduate school only	8
Medical school only	12
Comprehensive	8
R & D funding	
Top 50	7
All others	10

Changes in Staff Size and Enrollments

Data were gathered about the numbers of neuroscience faculty, postdoctorate trainees, and graduate students for fall 1980 and fall 1981, and estimates were asked for fall 1982. The results for the 188 institutions are summarized in table C.

Faculty. The data suggest that the growth in faculty observed during the the 1970s may be slowing. In the classifications shown in table C, the changes in faculty levels expected for AY1981-82 were lower than for the previous academic year in all but the medical school programs. The top 50 institutions maintained only a 2 percent growth rate, while the medical schools maintained their faculty growth at 4 percent.

Table C

Rate of Change in Neuroscience Faculty and Postdoctorate Trainee Staffing and Graduate Enrollment, 1980-82
(in percentages)

	Faculty		Postdoctorate Trainees		Graduate Students	
	1980-81	1981-82	1980-81	1981-82	1980-81	1981-82
All institutions	8	1	5	-2	4	-*
Control						
Public	8	3	6	-2	5	-1
Private	8	-2	4	-2	4	1
Type						
Graduate school only	8	3	8	-*	9	2
Medical school only	4	4	3	4	6	-6
Comprehensive	10	-1	5	-4	-*	-2
R & D funding						
Top 50	2	2	1	-1	1	*
All others	13	1	14	-3	7	-1

*Less than .5 percent.

Postdoctorate Trainees. The changes in the number of postdoctorate trainees expected by the respondents more consistently pointed toward actual declines. Declines were expected in both the public and private sectors, among the top 50 in R & D funding, and among neuroscience programs in both graduate schools and comprehensive institutions. The single exception was among medical school programs, which increased its growth from 3 percent between 1980 and 1981 to 4 percent between 1981 and 1982.

Graduate Students. Slower growth rates and an overall decline in total numbers were expected also for graduate students in the neurosciences. In all categories of institutions, as shown in table C, the numbers of graduate students were expected either to decline in 1982 or to increase at a rate below the 1980-81 interval.

Faculty-to-Trainee Ratios. The ratios of faculty to postdoctorate trainees and graduate students as of fall 1981 are shown in table D. The ratio overall was 110 trainees and students per 100 faculty, evidence of a very faculty-intensive program. There were some differences among kinds of institutions. Graduate schools had the highest ratios--160 postdoctorate trainees and graduate students per 100 faculty members--and medical schools had the lowest--80 trainees and graduate students per 100 faculty members. In addition, the ratios are higher (more trainees and graduate students per 100 faculty members) in programs at public than at private institutions, and among institutions in the top 20 and top 50 by federal R & D funding for biological research.

While these ratios are more complex than they might appear initially, they do reflect the nature of neuroscience, the influence of medical school training, and the need for considerable student-faculty interaction.

Table D

Postdoctorate Trainees and Graduate Students per 100 Faculty Members, Fall 1981

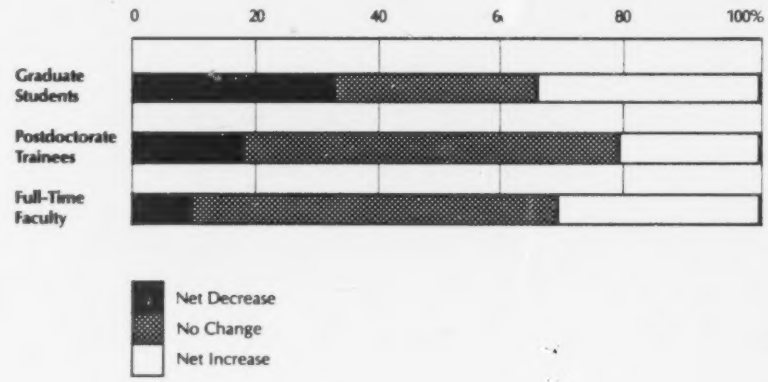
	Trainees and Students Per 100 Faculty
Total	110
Control	
Public	120
Private	100
Type	
Graduate school only	160
Medical school only	80
Comprehensive	100
R & D funding	
Top 20	130
Top 50	130
All others	100

Net Change Among Institutions

The institutions themselves offer another perspective of the changes occurring in neuroscience training. As shown in figure 4, more institutions reported net changes in graduate student enrollment than for faculty or postdoctorate trainees between 1980 and 1982. Roughly a third of the institutions reported net increases for graduate students; a third, net decreases; and a third, no change. In contrast, about three of every five institutions reported no net change in numbers of postdoctorate trainees or full-time faculty during the same period. Among institutions that did report changes in faculty counts, the net increases outstripped net decreases by more than three to one.

Primary Factors Associated with Net Changes. Table E lists the factors most frequently cited by the respondents to explain net changes in the number

FIGURE 4
Changes in Neuroscience Students, Trainees and Faculty Between Fall 1980 and Fall 1982



of graduate students, postdoctorate trainees, and faculty over the 1980-82 period.

The impact of recent changes in federal support levels is especially apparent. Insufficient federal support for training or research was mentioned as one of the primary factors responsible for decreasing numbers of graduate students and postdoctorate trainees, as well as faculty. Federal support of both training and research were also predominant factors cited by the institutions that reported increases in postdoctorate trainees.

Foreign Graduate Students and Postdoctorate Trainees

Another area of inquiry concerned the extent to which foreign citizens on temporary or student visas participate in the neuroscience programs as graduate students or postdoctorate trainees. Among all institutions, foreign citizens made up 9 percent of the graduate students and 20 percent of the postdoctorate trainees in the neuroscience programs in fall 1981. Foreign students and trainees were fairly evenly distributed among the different program and institution types (see detailed table 19).

Table E

Most Frequently Cited Primary Factors
to Explain Net Changes, 1980-1982

Net increase in:	Primary Factor	Percentage of Institutions Citing Factor
Graduate students	Number of applicants	25
	Professional interest	23
Postdoctorate trainees	Federal training grants and fellowships	25
	Federal research grants and contracts	22
Faculty	Professional interest	29
	Institutional/state support	29
Net decrease in:		
Graduate students	Number of applicants	26
	Federal training grants and fellowships	23
Postdoctorate trainees	Federal training grants and fellowships	33
	Federal research grants and contracts	33
Faculty	Federal research grants and contracts	12

Principal Areas of Concentration Since 1977

Louise Marshall of the Brain Research Institute, University of California at Los Angeles, analyzed data on new doctorates and research conducted in the neurosciences during the mid-seventies. She noted a concentration then in the behavioral sciences, physiology, and biology, with anatomy, biophysics, pharmacology, and biochemistry each accounting for somewhat smaller proportions of the activity in the neurosciences (Marshall, 1979; see table F).

Table F

Percentage Distributions of New Doctorates and Research Specialization in Neuroscience, by Discipline

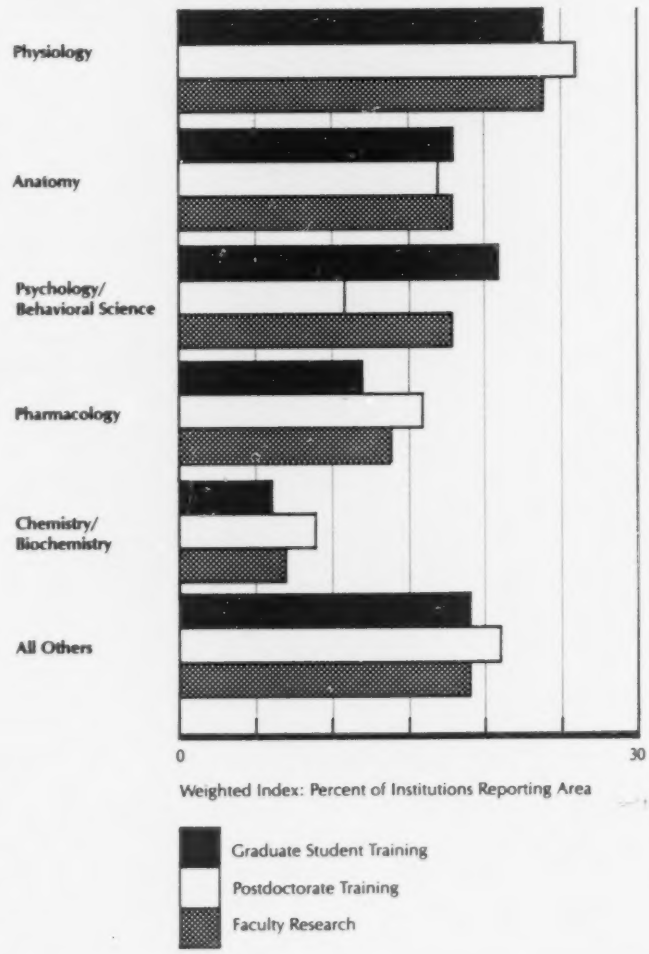
Discipline	New Doctorates 1974 (N=396)	New Doctorates 1976 (N=520)	Research 1974	Research 1976
Behavioral sciences	27	21	19	23
Physiology	21	18	19	29
Biology	7	20	11	10
Anatomy	13	9	10	6
Pharmacology	11	9	10	8
Biophysics/engineering	7	9	5	4
Biochemistry	7	5	13	9
Other health sciences	4	4	9	7
Communicative sciences	1	5	4	5

Source: Louise H. Marshall, "Maturation and Current Status of Neuroscience: Data from the 1976 Inventory of U.S. Neurologists," Experimental Neurology, Vol. 64, 1-32 (New York City: Academy Press, Inc., 1979).

Although not strictly comparable with data from Marshall's analysis, responses to the present survey show a very similar profile of neuroscience activity. A weighted aggregation[2] of the principal areas of concentration is shown in figure 5. These data show that the relative emphases are quite similar for graduate student training and postdoctorate training and research, as well as for faculty research--with the exception of psychology/behavioral science, which is less well represented in postdoctorate training and research. In all three sets of activity, physiology was the leading field, closely followed by anatomy and psychology/behavioral science.

[2]Respondents were asked to rank order the three top areas of concentration in training and research separately for graduate students, postdoctorate trainees, and faculty. For each group the first ranked area was assigned a weight of 3, the second ranked a weight of 2, and the third ranked a weight of 1. The weights then were summed for each area of concentration. The percentage distributions of the weighted results are detailed in tables 20-23.

FIGURE 5
Areas of Concentration in Neuroscience Training and Research Since 1977



Pharmacology and chemistry/biochemistry were in the next position in both training and research activity. None of the other ten areas listed in the survey accounted for more than 4 percent of the neuroscience activity. The detailed tables at the end of this report show how the areas of concentration differ among the various institutional settings and types of programs (see detailed tables 20-23).

Other Recent Changes in Neuroscience Training

Survey respondents also provided data about current and near-term Ph.D. production and changes in the typical duration of graduate study and post-doctorate training periods.

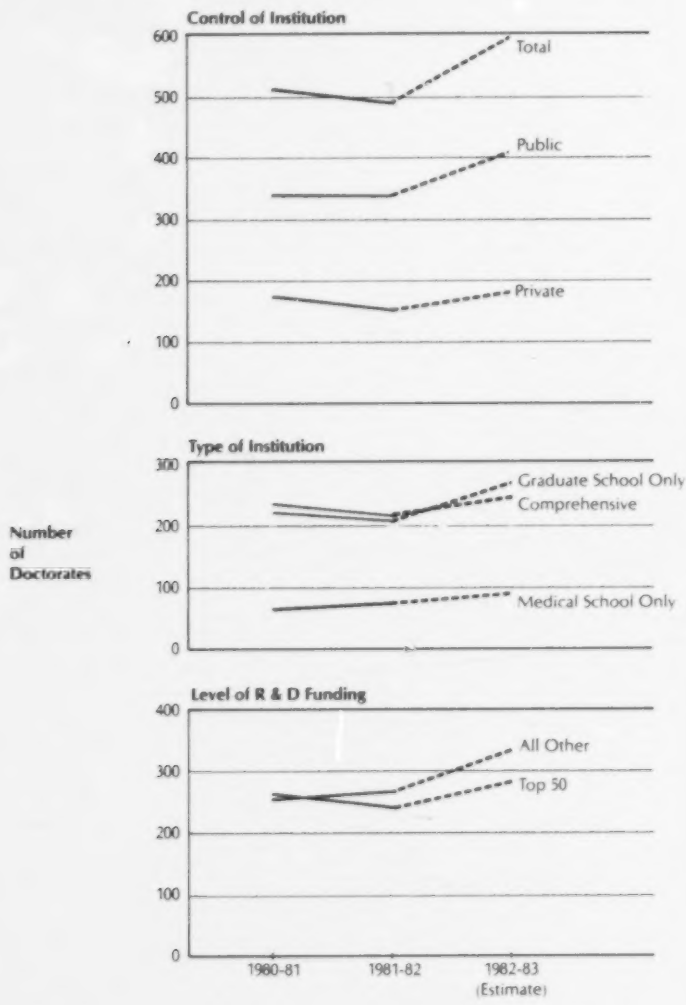
Numbers of Ph.D. Recipients. Changes in Ph.D. degree production between AY 1980-81 and AY 1982-83 are depicted in figure 6. Overall, the number of new doctorates declined (from 516 to 490) between 1981 and 1982, but the respondents projected a substantial gain in Ph.D. production for 1982-83 (to almost 600)--a 22 percent increase overall. One probably should be wary of the latter figure as an accurate projection. To produce these estimates, respondents were likely to consider all the Ph.D. candidates who could (or should) complete their doctoral work during the upcoming year. However, in Ph.D. programs, students' plans often go awry, and thus near-term projections generally tend to be on the high rather than the low side. Moreover, since the number per institution is small, an increase from 2 to 3 degree recipients is a 50 percent increase.

Duration of Study and Training

Typically, full-time students in the neurosciences completed their graduate studies in four or five years (figure 7). Most institutions (63 percent) reported five years was the norm, and 28 percent reported four years as typical. Only a few institutions (7 percent) listed six or more years, and fewer still reported that the typical length of study was three years or less.

Postdoctorate training tended to be of considerably shorter duration than graduate study--two years at two-thirds of the institutions and three years at most of the rest (26 percent). In a few instances--9 of the 124 institutions that had postdoctorate appointments since 1977--the training programs were held to one year or less.

FIGURE 6
New Doctorates in the Neurosciences in AY 1980-81, 1981-82, and Estimates for AY 1982-83



Typical study periods have not changed at most institutions during the five years since 1977 (table 26). Where changes have occurred, study/training periods were shortened at only a few institutions (graduate study at 3 percent; postdoctorate training at 5 percent). In contrast, 11 percent of the institutions indicated increases in the typical length of graduate study and 24 percent reported such increases for postdoctorate training. The most frequently cited factor associated with lengthening the graduate study period was

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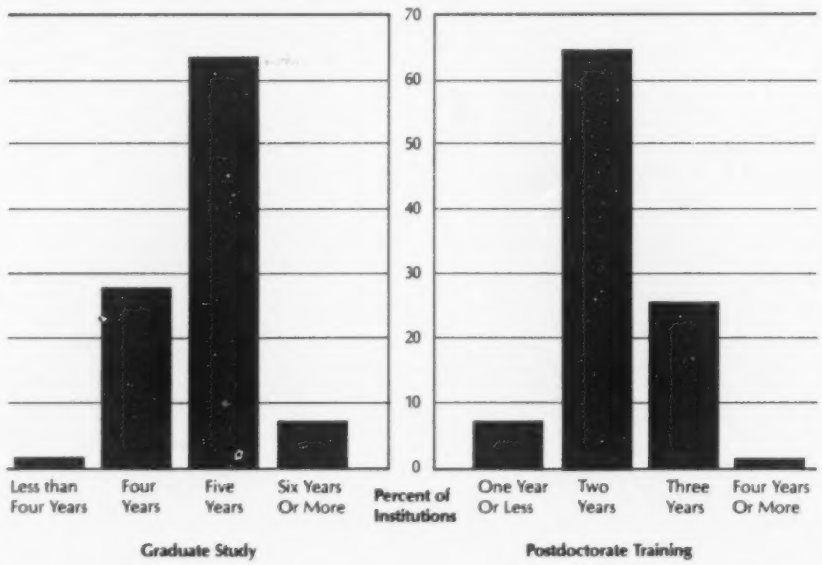
FIGURE 7
Typical Length of Graduate Study and Postdoctorate Training in the Neurosciences.



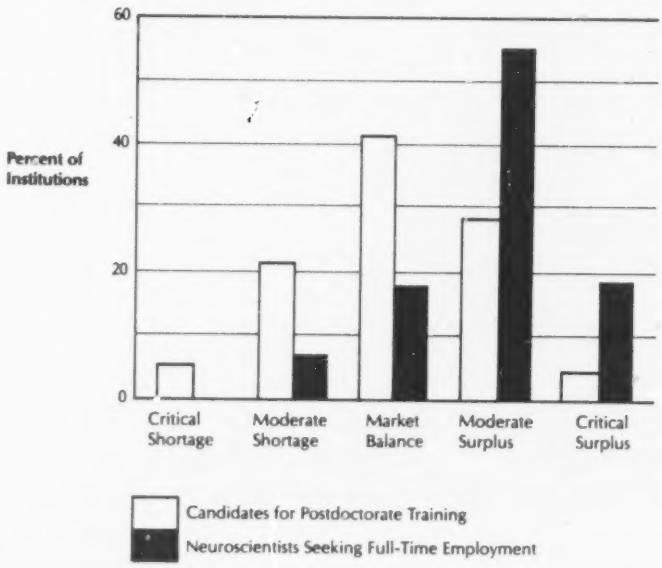
the lack of postdoctorate training opportunities (33 percent); the lack of full-time jobs in the field was cited as the major factor in extending the postdoctorate training period (69 percent).

Assessment of Postdoctorate Training and Employment Opportunities

Based on their recent placement experiences, respondents were asked to characterize the market during 1981-82 for postdoctorate training and full-time employment in neuroscience (figure 8). The assessments of postdoctorate training opportunities were normally distributed, with a plurality of respondents referring to a well-balanced market (41 percent). Twenty-six percent cited personnel shortages and 33 percent, personnel surpluses.

Opinions about employment opportunities were less balanced. Seventy-five percent believed there were more people than jobs in neuroscience, including one-fifth who thought the surplus was of a critical dimension. Only 18 percent

FIGURE 8
Assessments of Training and Employment Markets in Neuroscience
AY 1981-82



of the institutions considered the market in balance, and just 7 percent saw a moderate shortage of neuroscientists ready for full-time employment.

Summary

Earlier studies document the rapid growth of the neurosciences over the past decade. Data from the present survey suggest a gradual slow-down of an apparently maturing field of study that is not subject to the setting of strict boundaries that characterize many other established disciplines. The neurosciences seem likely to maintain a strongly interdisciplinary character. Judging from the many different areas of concentration cited by the respondents to this survey, the neurosciences are not much driven by the need to consolidate. The organization of training and research shows that the neurosciences continue to draw from a broad range of fields and are likely to remain closely associ-

ated with them. Six of every 10 primary training programs are offered through traditional departments, and 3 of every 10 are interdepartmental.

Evidence of a potential slowed growth in the field comes from tracking the people involved. There were 3,400 faculty teaching in the neurosciences as of fall 1981. Their numbers had grown moderately from the previous year but were expected to increase only slightly by the next year.

Moreover, postdoctorate trainees and graduate students experienced low to moderate growth between 1980 and 1981, but were anticipating declines between 1981 and 1982. Oddly enough, although the number of doctorate recipients dipped slightly between 1981 and 1982, respondents expected a sizable increase to 600 Ph.D.s in 1983.

According to two-fifths of the survey institutions, the market for postdoctorate trainees and positions is in balance. The remaining institutions were fairly evenly split between the view that there was a personnel surplus and the view that there was a personnel shortage. With respect to full-time employment of neuroscientists, however, three-quarters of the institutions felt there already was a personnel surplus.

Detailed Statistical Tables

Table 1

Organization of Primary Neuroscience Training Programs at Ph.D.-Granting Institutions, AY 1981-82, by Control of Institution

(in percentages)

Primary Training Program	Total	Public	Private
Department of neuroscience, Ph.D. in neuroscience	3	2	5
Interdepartmental program, Ph.D. in neuroscience	11	13	8
Interdepartmental program, Ph.D. in traditional discipline with specialization in neuroscience	20	22	17
Traditional department, Ph.D. in traditional discipline with specialization in neuroscience	57	57	58
Other	9	7	11
Total percent	100	100	100
(Total number)	(N=188)	(N=125)	(N=63)

Note: On this and following tables, numbers may not add exactly to totals because of weighting and rounding.

Table 2

Organization of Primary Neuroscience Training Programs at Ph.D.-Granting Institutions, AY 1981-82, by Type of Institution

(in percentages)

Primary Training Program	Graduate School Only	Medical School Only	Comprehensive
Department of neuroscience, Ph.D. in neuroscience	0	0	8
Interdepartmental program, Ph.D. in neuroscience	2	24	16
Interdepartmental program, Ph.D. in traditional discipline with specialization in neuroscience	27	11	16
Traditional department, Ph.D. in traditional discipline with specialization in neuroscience	63	59	48
Other	8	5	11
Total percent	100	100	100
(Total number)	(N=90)	(N=37)	(N=61)

Table 3

Organization of Primary Neuroscience Training Programs at Ph.D.-Granting Institutions, AY 1981-82, by Federally Financed R & D Expenditures in the Biological Sciences in 1980

(in percentages)

Primary Training Program	Top 20	Next 30	Top 50	All Other
Department of neuroscience, Ph.D. in neuroscience	10	3	6	1
Interdepartmental program, Ph.D. in neuroscience	55	7	26	6
Interdepartmental program, Ph.D. in traditional discipline with specialization in neuroscience	0	27	16	22
Traditional department, Ph.D. in traditional discipline with specialization in neuroscience	25	53	42	63
Other	10	10	10	8
Total percent	100	100	100	100
(Total number)	(N=20)	(N=30)	(N=50)	(N=138)

Table 4

Percentage Distribution of Additional Neuroscience Training Programs at Ph.D.-Granting Institutions, AY 1981-82 by Control of Institution

Organization of Primary Training Program	Number	Total Percent	No Additional Programs	One Additional Program	More Than One Additional Program
			Total		
Department of neuroscience	5	100	40	40	20
Interdepartmental program, neuroscience Ph.D.	21	100	48	48	5
Interdepartmental program, traditional Ph.D.	38	100	71	29	0
Traditional program	108	100	75	23	2
Other	16	100	94	6	0
			Public		
Department of neuroscience	2	100	100	0	0
Interdepartmental program, neuroscience Ph.D.	16	100	44	56	0
Interdepartmental program, traditional Ph.D.	27	100	70	30	0
Traditional program	71	100	75	24	1
Other	9	100	89	11	0
			Private		
Department of neuroscience	3	100	0	67	33
Interdepartmental program, neuroscience Ph.D.	5	100	60	20	20
Interdepartmental program, traditional Ph.D.	11	100	73	27	0
Traditional program	37	100	76	22	3
Other	7	100	100	0	0

Table 5

Percentage Distribution of Additional Neuroscience Training Programs at Ph.D.-Granting Institutions, AY 1981-82 by Type of Institution

Organization of Primary Training Program	Number	Total Percent	No Additional Programs	One Additional Program	More than One Additional Program
			Graduate School Only		
Department of neuroscience	0	---	0	0	0
Interdepartmental program, neuroscience Ph.D.	2	100	50	50	0
Interdepartmental program, traditional Ph.D.	24	100	71	29	0
Traditional program	57	100	82	18	0
Other	7	100	100	0	0
			Medical School Only		
Department of neuroscience	0	---	0	0	0
Interdepartmental program, neuroscience Ph.D.	9	100	44	56	0
Interdepartmental program, traditional Ph.D.	4	100	75	25	0
Traditional program	22	100	64	36	0
Other	2	100	100	0	0
			Comprehensive		
Department of neuroscience	5	100	40	40	20
Interdepartmental program, neuroscience Ph.D.	10	100	50	40	10
Interdepartmental program, traditional Ph.D.	10	100	70	30	0
Traditional program	29	100	69	24	7
Other	7	100	86	14	0

Table 6

Full-Time Faculty and Nonfaculty Research Doctorates
in Neuroscience Programs, Fall 1981,
by Control of Institution

Characteristic	Total		Public		Private	
	N	%	N	%	N	%
Total faculty	3,421	100	2,212	100	1,209	100
(Tenured)	2,340	68	1,648	74	692	57
(Nontenured)	1,081	32	565	26	516	43
Nonfaculty research doctorates	396	--	233	--	163	--
Faculty vacancies	141	--	85	--	56	--
As a percent of total faculty	--	4	--	4	--	5
Faculty retirements expected in 1982-83	32	--	17	--	15	--
As a percent of total faculty	--	1	--	1	--	1

Table 7

Full-Time Faculty and Nonfaculty Research Doctorates
in Neuroscience Programs, Fall 1981,
by Type of Institution

Characteristic	Graduate School Only		Medical School Only		Comprehensive	
	N	%	N	%	N	%
Total faculty	908	100	762	100	1,752	100
(Tenured)	654	72	475	62	1,211	69
(Nontenured)	254	28	287	38	540	31
Nonfaculty research doctorates	120	--	61	--	215	--
Faculty vacancies	44	--	37	--	61	--
As a percent of total faculty	--	5	--	5	--	4
Faculty retirements expected in 1982-83	11	--	3	--	18	--
As a percent of total faculty	--	1	--	*	--	1

*Less than .5 percent.

Table 8

Full-Time Faculty and Nonfaculty Research Doctorates
in Neuroscience Programs, Fall 1981,
by Federally Funded R & D Expenditures in the Biological Sciences in 1980

Characteristic	Top 50		All Other	
	N	%	N	%
Total faculty	1,570	100	1,873	100
(Tenured)	1,114	71	1,240	66
(Nontenured)	456	29	632	34
Nonfaculty research doctorates	213	--	190	--
Faculty vacancies	52	--	90	--
As a percent of total faculty	--	3	--	5
Faculty retirements expected in 1982-83	15	--	17	--
As a percent of total faculty	--	1	--	1

Note: Data from the top 50 and all other institutions were weighted separately and therefore may not add exactly to the total for all institutions.

Table 9

Full-Time Faculty and Nonfaculty Research Doctorates
in Neuroscience Programs, Fall 1981,
by Organization of Primary Neuroscience Training Program

Characteristic	Type A		Type B		Type C		Type D		Type E	
	N	%	N	%	N	%	N	%	N	%
Total faculty	99	100	757	100	713	100	1,612	100	241	100
(Tenured)	46	46	540	71	488	68	1,121	70	145	60
(Nontenured)	53	54	217	29	225	32	491	30	96	40
Nonfaculty research doctorates	16	--	81	--	85	--	181	--	33	--
Faculty vacancies	3	--	33	--	33	--	65	--	7	--
As a percent of total faculty	--	3	--	4	--	5	--	4	--	3
Faculty retirements expected in 1982-83	1	--	4	--	4	--	21	--	1	--
As a percent of total faculty	--	1	--	1	--	1	--	1	--	*

Type A: Department of neuroscience, Ph.D in neuroscience
Type B: Interdepartmental program, Ph.D in neuroscience
Type C: Interdepartmental program, Ph.D in traditional discipline with specialization in neuroscience
Type D: Traditional department, Ph.D in traditional discipline with specialization in neuroscience
Type E: Other

*Less than .5 percent.

Table 10

Graduate Students, Postdoctorate Trainees, and Faculty in Neuroscience Programs, by Control of Institution

Item	Number			Percent Change		
	Fall 1980	Fall 1981	Fall 1982	1980-81	1981-82	1980-82
			Total			
Graduate students	2,463	2,574	2,566	4	-*	4
Postdoctorate trainees	1,226	1,292	1,269	5	-2	4
Faculty	3,172	3,421	3,469	8	1	9
			Public			
Graduate students	1,769	1,855	1,837	5	-1	4
Postdoctorate trainees	785	834	821	6	-2	5
Faculty	2,056	2,212	2,285	8	3	11
			Private			
Graduate students	695	719	729	4	1	5
Postdoctorate trainees	441	457	448	4	-2	2
Faculty	1,116	1,209	1,184	8	-2	6

*Less than .5 percent

Table 11

Graduate Students, Postdoctorate Trainees, and Faculty in Neuroscience Programs, by Type of Institution

Item	Number			Percent Change		
	Fall 1980	Fall 1981	Fall 1982	1980-81	1981-82	1980-82
Graduate School Only						
Graduate students	1,122	1,219	1,244	9	2	11
Postdoctorate trainees	221	239	238	8	-*	8
Faculty	843	908	933	8	3	11
Medical School Only						
Graduate students	294	313	295	6	-6	*
Postdoctorate trainees	289	298	309	3	4	7
Faculty	736	762	795	4	4	8
Comprehensive						
Graduate students	1,047	1,043	1,027	-*	-2	-2
Postdoctorate trainees	716	754	722	5	-4	1
Faculty	1,593	1,752	1,741	10	-1	9

*Less than .5 percent.

Table 12

Graduate Students, Postdoctorate Trainees, and Faculty in Neuroscience Programs, by Federally Financed R & D Expenditures in the Biological Sciences in 1980

Item	Number			Percent Change		
	Fall 1980	Fall 1981	Fall 1982	1980-81	1981-82	1980-82
Top 20						
Graduate students	541	526	521	-3	-1	-4
Postdoctorate trainees	551	554	550	1	-1	-*
Faculty	806	818	832	2	2	3
Next 30						
Graduate students	582	610	617	5	1	6
Postdoctorate trainees	291	295	289	1	-2	-1
Faculty	730	753	774	3	3	6
Top 50						
Graduate students	1,123	1,137	1,138	1	*	1
Postdoctorate trainees	842	849	839	1	-1	-*
Faculty	1,535	1,570	1,605	2	2	5
All Other						
Graduate students	1,370	1,470	1,462	7	-1	7
Postdoctorate trainees	394	451	437	14	-3	11
Faculty	1,661	1,873	1,887	13	1	14

Note: Data from the top 50 and all other institutions were weighted separately and therefore may not add exactly to the total for all institutions.

*Less than .5 percent

Table 13

Graduate Students, Postdoctorate Trainees, and Faculty in Neuroscience Programs, by Organization of Primary Neuroscience Training Program

Item	Number			Percent Change		
	Fall 1980	Fall 1981	Fall 1982	1980-81	1981-82	1980-82
Type A						
Graduate students	86	83	87	-4	5	1
Postdoctorate trainees	28	38	35	36	-8	25
Faculty	86	99	101	15	2	17
Type B						
Graduate students	427	421	419	-1	-1	-2
Postdoctorate trainees	468	469	473	*	1	1
Faculty	741	757	785	2	4	6
Type C						
Graduate students	555	641	642	16	*	16
Postdoctorate trainees	139	145	150	4	3	8
Faculty	602	713	725	18	2	20
Type D						
Graduate students	1,240	1,280	1,272	3	-1	3
Postdoctorate trainees	514	568	541	10	-5	5
Faculty	1,534	1,612	1,615	5	*	5
Type E						
Graduate students	155	149	146	-4	-2	-6
Postdoctorate trainees	76	71	71	-7	0	-7
Faculty	210	241	243	15	1	16

Type A: Department of neuroscience, Ph.D. in neuroscience
Type B: Interdepartmental program, Ph.D. in neuroscience
Type C: Interdepartmental program, Ph.D. in traditional discipline with specialization in neuroscience
Type D: Traditional department, Ph.D. in traditional discipline with specialization in neuroscience
Type E: Other

*Less than .5 percent

Table 14

Percentage Distribution of Institutions Reporting Changes in Numbers of Graduate Students, Postdoctorate Trainees, and Faculty Between Fall 1980 and Fall 1982 by Control of Institution

Item	Total Percent	No Change	Net Increase	Net Decrease
		Total (N=188)		
Graduate students	100	32	35	33
Postdoctorate trainees	100	61	21	18
Faculty	100	60	31	9
		Public (N=125)		
Graduate students	100	30	34	36
Postdoctorate trainees	100	62	22	16
Faculty	100	60	32	8
		Private (N=63)		
Graduate students	100	40	33	27
Postdoctorate trainees	100	60	19	21
Faculty	100	57	32	11

Table 15

Percentage Distribution of Institutions Reporting Changes in Numbers of Graduate Students, Postdoctorate Trainees, and Faculty Between Fall 1980 and Fall 1982 by Type of Institution

Item	Total Percent	No Change	Net Increase	Net Decrease
Graduate School Only (N=90)				
Graduate students	100	32	38	30
Postdoctorate trainees	100	73	17	10
Faculty	100	61	30	9
Medical School Only (N=37)				
Graduate students	100	38	30	32
Postdoctorate trainees	100	43	32	24
Faculty	100	54	35	11
Comprehensive (N=61)				
Graduate students	100	31	31	38
Postdoctorate trainees	100	57	20	23
Faculty	100	59	33	8

Table 16

Percentage Distribution of Institutions Reporting Changes in Numbers of Graduate Students, Postdoctorate Trainees, and Faculty Between Fall 1980 and Fall 1982 by Federally Funded R & D Expenditures in the Biological Sciences in 1980

Item	Total Percent	No Change	Net Increase	Net Decrease
		Top 20		
Graduate students	100	30	25	45
Postdoctorate trainees	100	45	25	30
Faculty	100	60	25	15
		Next 30		
Graduate students	100	50	23	27
Postdoctorate trainees	100	57	23	20
Faculty	100	60	37	3
		Top 50		
Graduate students	100	42	24	34
Postdoctorate trainees	100	52	24	24
Faculty	100	60	32	8
		All Other (N=138)		
Graduate students	100	30	38	33
Postdoctorate trainees	100	65	20	15
Faculty	100	59	32	9

Table 17

Percentage Distribution of Institutions Reporting Changes in Numbers of Graduate Students, Postdoctorate Trainees, and Faculty Between Fall 1980 and Fall 1982 by Organization of Primary Neuroscience Training Program

Item	Total Percent	No Change	Net Increase	Net Decrease
		Type A (N=5)		
Graduate students	100	20	20	60
Postdoctorate trainees	100	20	40	40
Faculty	100	60	40	0
		Type B (N=21)		
Graduate students	100	19	43	38
Postdoctorate trainees	100	48	29	24
Faculty	100	43	48	10
		Type C (N=38)		
Graduate students	100	37	39	24
Postdoctorate trainees	100	58	24	18
Faculty	100	50	39	11
		Type D (N=108)		
Graduate students	100	31	34	34
Postdoctorate trainees	100	66	18	15
Faculty	100	61	29	10
		Type E (N=16)		
Graduate students	100	50	12	38
Postdoctorate trainees	100	75	12	12
Faculty	100	88	12	0

Type A: Department of neuroscience, Ph.D. in neuroscience
Type B: Interdepartmental program, Ph.D. in neuroscience
Type C: Interdepartmental program, Ph.D. in traditional discipline with specialization in neuroscience
Type D: Traditional department, Ph.D. in traditional discipline with specialization in neuroscience
Type E: Other

Table 18

Primary Factor for Net Change in Number of Graduate Students, Postdoctorate Trainees, and Faculty Between Fall 1980 and Fall 1982 All Institutions

(in percentages)

Primary Factor	Institutions Reporting Net Change: Increase	Decrease
Graduate Students		
Federal training grant support	3	23
Federal research grant support	9	8
Institutional/state support	12	3
Number of applicants	25	26
Quality of applicants	9	18
Professional interest	23	6
Demand for graduates	5	6
Other	14	10
Total percent	100	100
(Total number)	(65)	(62)
Postdoctorate Trainees		
Federal training grant support	25	33
Federal research grant support	22	33
Institutional/state support	8	0
Number of applicants	15	15
Quality of applicants	5	3
Professional interest	10	3
Demand for graduates	0	0
Other	15	12
Total percent	100	100
(Total number)	(40)	(33)
Faculty		
Federal training grant support	2	0
Federal research grant support	3	12
Institutional/state support	29	6
Number of applicants	0	0
Quality of applicants	3	6
Professional interest	29	6
Demand for graduates	2	0
Other	31	71
Total percent	100	100
(Total number)	(58)	(17)

Table 19

Foreign Full-Time Graduate Students and Postdoctorate Trainees, Fall 1981
by Selected Institutional Characteristics

Characteristics	Foreign Graduate Students		Foreign Postdoctorate Trainees	
	Number	As a % of Total Graduate Students	Number	As a % of Total Postdoctorate Trainees
Total institutions	221	9	254	20
Control of Institution				
Public	155	8	174	21
Private	66	9	80	17
Type of Institution				
Graduate school only	111	9	53	22
Medical school only	30	10	62	21
Comprehensive	80	8	139	18
Federally Funded R & D Expenditures in the Biological Sciences in 1980				
Top 50	89	8	168	20
All other	134	9	88	19
Organization of Primary Neuroscience Training Program				
Department of neuroscience	4	5	7	18
Interdepartmental program, neuroscience Ph.D.	32	8	103	22
Interdepartmental program, traditional Ph.D.	61	10	28	20
Traditional program	114	9	103	18
Other	9	6	12	17

Table 20

Principal Areas of Concentration in Training and Research of Graduate Students, Postdoctorate Trainees, and Faculty in Neuroscience Programs Since 1977, by Control of Institution

(in percentages)

Area	Graduate Student Training	Postdoctorate Training/ Research	Faculty Research
Total (N=188)			
Anatomy	18	17	18
Biology	4	3	3
Biostatistics/mathematics	*	0	*
Biophysics	2	3	2
Bioengineering	2	1	1
Cell biology/microbiology	2	2	2
Clinical/medical sciences	1	2	2
Chemistry/biochemistry	6	9	7
Epidemiology/public health	0	0	0
Genetics	1	1	1
Pathology/toxicology	1	0	1
Pharmacology	12	16	14
Physiology	24	26	24
Psychology/behavioral sciences	21	11	18
Zoology	2	1	1
Other	2	3	2
Combination of above	4	5	5
Total percent	100	100	100
Public (N=125)			
Anatomy	18	18	17
Biology	3	3	3
Biostatistics/mathematics	*	0	*
Biophysics	1	3	2
Bioengineering	1	*	1
Cell biology/microbiology	2	1	1
Clinical/medical sciences	1	1	2
Chemistry/biochemistry	6	9	7
Epidemiology/public health	0	0	0
Genetics	*	1	*
Pathology/toxicology	1	0	1
Pharmacology	12	17	14
Physiology	25	28	27
Psychology/behavioral sciences	24	12	20
Zoology	2	1	1
Other	*	2	1
Combination of above	3	4	3
Total percent	100	100	100
Private (N=63)			
Anatomy	19	15	19
Biology	6	3	4
Biostatistics/mathematics	1	0	*
Biophysics	3	3	3
Bioengineering	2	3	2
Cell biology/microbiology	2	2	3
Clinical/medical sciences	1	3	1
Chemistry/biochemistry	5	10	6
Epidemiology/public health	0	0	0
Genetics	1	1	1
Pathology/toxicology	1	0	*
Pharmacology	11	14	12
Physiology	20	22	18
Psychology/behavioral sciences	16	11	15
Zoology	1	1	1
Other	4	4	4
Combination of above	7	7	9
Total percent	100	100	100

Note: Institutions reported three major areas of concentration. First-ranked areas were weighted by a factor of 3, second-ranked by a factor of 2, and third-ranked by a factor of 1. The above distributions reflect the weighted aggregation.

*Less than .5 percent.

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Table 21

Principal Areas of Concentration in Training and Research of Graduate Students, Postdoctorate Trainees, and Faculty in Neuroscience Programs Since 1977, by Type of Institution

(in percentages)

Area	Graduate Student Training	Postdoctorate Training/ Research	Faculty Research
		Graduate School Only (N=90)	
Anatomy	11	15	11
Biology	5	4	3
Biostatistics/mathematics	*	0	*
Biophysics	2	3	2
Bioengineering	2	2	2
Cell biology/microbiology	3	3	2
Clinical/medical sciences	2	0	2
Chemistry/biochemistry	4	5	5
Epidemiology/public health	0	0	0
Genetics	1	2	1
Pathology/toxicology	1	0	1
Pharmacology	8	12	12
Physiology	23	27	25
Psychology/behavioral sciences	30	17	28
Zoology	2	0	1
Other	1	2	*
Combination of above	4	8	4
Total percent	100	100	100
		Medical School Only (N=37)	
Anatomy	30	19	28
Biology	3	1	1
Biostatistics/mathematics	0	0	0
Biophysics	1	3	2
Bioengineering	1	0	0
Cell biology/microbiology	2	2	3
Clinical/medical sciences	1	4	1
Chemistry/biochemistry	6	10	8
Epidemiology/public health	0	0	0
Genetics	0	0	0
Pathology/toxicology	1	0	1
Pharmacology	19	21	18
Physiology	24	26	20
Psychology/behavioral sciences	8	6	8
Zoology	0	0	0
Other	3	3	4
Combination of above	4	5	7
Total percent	100	100	100
		Comprehensive (N=61)	
Anatomy	22	17	21
Biology	4	2	5
Biostatistics/mathematics	1	0	*
Biophysics	2	2	2
Bioengineering	1	2	*
Cell biology/microbiology	0	1	0
Clinical/medical sciences	1	2	2
Chemistry/biochemistry	8	13	10
Epidemiology/public health	0	0	0
Genetics	0	1	0
Pathology/toxicology	*	0	0
Pharmacology	12	16	14
Physiology	24	25	25
Psychology/behavioral sciences	17	10	12
Zoology	1	2	2
Other	3	3	3
Combination of above	5	3	6
Total percent	100	100	100

Note: Institutions reported three major areas of concentration. First-ranked areas were weighted by a factor of 3, second-ranked by a factor of 2, and third-ranked by a factor of 1. The above distributions reflect the weighted aggregation.

*Less than .5 percent.

Table 22

Principal Areas of Concentration in Training and Research of Graduate Students, Postdoctorate Trainees, and Faculty in Neuroscience Programs Since 19/7, by Federally Financed R & D Expenditures in the Biological Sciences in 1980

(in percentages)

Area	Graduate Student Training	Postdoctorate Training/ Research	Faculty Research
		Top 50	
Anatomy	19	18	20
Biology	5	4	5
Biostatistics/mathematics	0	0	0
Biophysics	2	2	2
Bioengineering	2	1	1
Cell biology/microbiology	1	1	2
Clinical/medical sciences	0	1	1
Chemistry/biochemistry	5	9	6
Epidemiology/public health	0	0	0
Genetics	0	0	0
Pathology/toxicology	0	0	0
Pharmacology	12	17	13
Physiology	25	24	24
Psychology/behavioral sciences	17	11	15
Zoology	1	0	1
Other	4	5	4
Combination of above	8	6	5
Total percent	100	100	100
		All Other (N=138)	
Anatomy	18	16	17
Biology	4	2	2
Biostatistics/mathematics	1	0	*
Biophysics	1	3	2
Bioengineering	2	1	1
Cell biology/microbiology	2	2	2
Clinical/medical sciences	2	2	2
Chemistry/biochemistry	6	9	7
Epidemiology/public health	0	0	0
Genetics	1	1	1
Pathology/toxicology	1	0	1
Pharmacology	12	15	14
Physiology	23	27	24
Psychology/behavioral sciences	23	12	20
Zoology	2	2	1
Other	1	2	1
Combination of above	3	5	5
Total percent	100	100	100

Note: Institutions reported three major areas of concentration. First-ranked areas were weighted by a factor of 3, second-ranked by a factor of 2, and third-ranked by a factor of 1. The above distributions reflect the weighted aggregation.

*Less than .5 percent.

Table 23

Principal Areas of Concentration in Training and Research of Graduate Students, Postdoctorate Trainees, and Faculty in Neuroscience Programs Since 1977, by Organization of Primary Neuroscience Training Program

(in percentages)

Area	Graduate Student Training	Postdoctorate Training/ Research	Faculty Research
		Type A (N=5)	
Anatomy	12	17	17
Biology	0	0	0
Biostatistics/mathematics	0	0	0
Biophysics	0	8	4
Bioengineering	0	0	0
Cell biology/microbiology	0	0	0
Clinical/medical sciences	0	0	0
Chemistry/biochemistry	29	29	25
Epidemiology/public health	0	0	0
Genetics	0	0	0
Pathology/toxicology	0	0	0
Pharmacology	0	0	0
Physiology	33	20	28
Psychology/behavioral sciences	0	0	0
Zoology	0	0	0
Other	26	26	26
Combination of above	0	0	0
Total percent	100	100	100
		Type B (N=21)	
Anatomy	22	22	21
Biology	7	5	6
Biostatistics/mathematics	0	0	0
Biophysics	2	4	4
Bioengineering	0	0	0
Cell biology/microbiology	2	1	2
Clinical/medical sciences	0	3	0
Chemistry/biochemistry	8	9	11
Epidemiology/public health	0	0	0
Genetics	0	0	0
Pathology/toxicology	0	0	0
Pharmacology	10	10	6
Physiology	28	28	28
Psychology/behavioral sciences	10	6	13
Zoology	0	0	0
Other	4	4	4
Combination of above	6	7	5
Total percent	100	100	100
		Type C (N=38)	
Anatomy	18	19	15
Biology	3	4	2
Biostatistics/mathematics	0	0	0
Biophysics	1	0	1
Bioengineering	3	3	2
Cell biology/microbiology	3	6	2
Clinical/medical sciences	2	0	2
Chemistry/biochemistry	6	8	7
Epidemiology/public health	0	0	0
Genetics	3	4	3
Pathology/toxicology	1	0	0
Pharmacology	10	14	14
Physiology	23	24	26
Psychology/behavioral sciences	24	14	23
Zoology	1	0	1
Other	2	4	2
Combination of above	1	2	1
Total percent	100	100	100

Continued

Table 23 (Continued)

Principal Areas of Concentration in Training and Research of Graduate Students, Postdoctorate Trainees, and Faculty in Neuroscience Programs Since 1977, by Organization of Primary Neuroscience Training Program

(in percentages)

Area	Graduate Student Training	Postdoctorate Training/ Research	Faculty Research
		Type D (N=108)	
Anatomy	19	16	19
Biology	4	2	3
Biostatistics/mathematics	1	0	*
Biophysics	2	4	2
Bioengineering	1	1	1
Cell biology/microbiology	2	1	2
Clinical/medical sciences	1	2	2
Chemistry/biochemistry	4	8	6
Epidemiology/public health	0	0	0
Genetics	*	0	*
Pathology/toxicology	1	0	1
Pharmacology	13	20	16
Physiology	23	28	23
Psychology/behavioral sciences	22	11	18
Zoology	2	1	1
Other	1	1	1
Combination of above	5	6	6
Total percent	100	100	100
		Type E (N=16)	
Anatomy	8	13	12
Biology	3	4	3
Biostatistics/mathematics	1	0	1
Biophysics	1	0	0
Bioengineering	4	0	4
Cell biology/microbiology	0	0	2
Clinical/medical sciences	4	4	4
Chemistry/biochemistry	3	10	5
Epidemiology/public health	0	0	0
Genetics	0	0	0
Pathology/toxicology	0	0	0
Pharmacology	8	14	13
Physiology	19	20	17
Psychology/behavioral sciences	35	19	25
Zoology	3	5	4
Other	1	2	1
Combination of above	9	10	9
Total percent	100	100	100

Type A: Department of neuroscience, Ph.D in neuroscience
Type B: Interdepartmental program, Ph.D. in neuroscience
Type C: Interdepartmental program, Ph.D. in traditional discipline with specialization in neuroscience
Type D: Traditional department, Ph.D. in traditional discipline with specialization in neuroscience
Type E: Other

Note: Institutions reported three major areas of concentration. First-ranked areas were weighted by a factor of 3, second-ranked by a factor of 2, and third-ranked by a factor of 1. The above distributions reflect the weighted aggregation.

*Less than .5 percent.

Table 24

Number of Ph.D. Recipients in Neuroscience Programs, by Selected Institutional Characteristics

Characteristic	Academic Year 1980-81	1981-82	1982-83
Total	516	490	599
Control of Institution			
Public	340	335	410
Private	176	155	189
Type of Institution			
Graduate school only	216	204	264
Medical school only	69	79	88
Comprehensive	231	207	247
Federally Funded R & D Expenditures in the Biological Sciences in 1980*			
Top 50	263	232	272
All other	262	263	335
Organization of Primary Neuroscience Training Program			
Department of neuroscience	20	12	16
Interdepartmental program, neuroscience Ph.D.	84	85	98
Interdepartmental program, traditional Ph.D	116	102	118
Traditional program	265	267	329
Other	31	25	38

*Data from the top 50 and all other institutions were weighted separately and therefore may not add exactly to the total for all institutions.

Table 25

Typical Length of Full-Time Study and Training
for Graduate Students and
Postdoctorate Trainees Who Completed
Neuroscience Programs During AY 1980-81,
All Institutions

(in percentages)

Length of Time	Total
Graduate students	
Three years or less	2
Four years	28
Five years	63
Six years	5
Seven years	2
Eight years or more	0
Total percent	100
(Total number)	(N=175)*
Postdoctorate trainees	
One year or less	7
Two years	65
Three years	26
Four years or more	2
Total percent	100
(Total number)	(N=124)*

*The number of institutions represented on this table is lower than the population because some neuroscience programs began too recently for graduate students or postdoctorate trainees to have completed their study or training periods. Further, not all institutions provided postdoctorate training.

Table 26

Change Since 1977 in the Typical Length of Full-Time Study and Training for Graduate Students and Postdoctorate Trainees in Neuroscience Programs, All Institutions

(in percentages)

Change Reported	Graduate Study Period	Postdoctorate Training Period
No change	85	72
Decrease	3	5
Increase of less than one year	5	10
Increase of one year or more	6	14
Total percent	100	100
(Total number)	(N=175)*	(N=124)*
Primary factor for increase in study or training period:		
Lack of postdoctorate training opportunities/full-time jobs in the field	33	69
Expansion of curricula or training program requirements	28	3
Professional need/interest for additional training and specialization	29	21
Availability of stipend/salary support	5	3
Other	5	3
Total percent	100	100
(Total number)	(N=21)	(N=29)

*The number of institutions represented on this table is lower than the population because some neuroscience programs began too recently for graduate students or postdoctorate trainees to have completed their study or training periods. Further, not all institutions provided postdoctorate training.

Table 27

Opinions About Market for Postdoctorate Training and Full-Time Employment in Neuroscience, AY 1981-82
by Control of Institution

(in percentages)

Market	Postdoctorate Training	Full-Time Employment
	Total	
Critical shortage of personnel	5	0
Moderate shortage of personnel	21	7
Market balance	41	18
Moderate surplus of personnel	29	56
Critical surplus of personnel	4	19
Total percent	100	100
(Total number)*	(180)	(181)
	Public	
Critical shortage of personnel	4	0
Moderate shortage of personnel	22	6
Market balance	39	20
Moderate surplus of personnel	32	56
Critical surplus of personnel	4	18
Total percent	100	100
(Total number)*	(121)	(121)
	Private	
Critical shortage of personnel	8	0
Moderate shortage of personnel	17	8
Market balance	46	13
Moderate surplus of personnel	24	57
Critical surplus of personnel	5	22
Total percent	100	100
(Total number)*	(59)	(60)

*The numbers of institutions represented here are lower than the population numbers because not all institutions answered the questions.

Table 28

Opinions About Market for Postdoctorate Training and Full-Time Employment in Neuroscience, AY 1981-82
by Type of Institution

(in percentages)

Market	Postdoctorate Training	Full-Time Employment
	Graduate School Only	
Critical shortage of personnel	4	0
Moderate shortage of personnel	22	4
Market balance	39	25
Moderate surplus of personnel	30	51
Critical surplus of personnel	5	20
Total percent	100	100
(Total number)*	(84)	(84)
	Medical School Only	
Critical shortage of personnel	11	0
Moderate shortage of personnel	23	12
Market balance	37	12
Moderate surplus of personnel	23	61
Critical surplus of personnel	6	15
Total percent	100	100
(Total number)*	(35)	(36)
	Comprehensive	
Critical shortage of personnel	2	0
Moderate shortage of personnel	16	8
Market balance	48	13
Moderate surplus of personnel	33	59
Critical surplus of personnel	2	21
Total percent	100	100
(Total number)	(61)	(61)

*The numbers of institutions represented here are lower than the population numbers because not all institutions answered the questions.

Table 29

Opinions About Market for Postdoctorate Training and Full-Time Employment in Neuroscience, AY 1981-82
by Federally Financed R & D Expenditures in the Biological Sciences in 1980

(in percentages)

Market	Postdoctorate Training	Full-Time Employment
	Top 50	
Critical shortage of personnel	5	0
Moderate shortage of personnel	18	4
Market balance	42	20
Moderate surplus of personnel	35	61
Critical surplus of personnel	0	14
Total percent	100	100
(Total number)*	(49)	(49)
	All Other	
Critical shortage of personnel	5	0
Moderate shortage of personnel	21	8
Market balance	40	18
Moderate surplus of personnel	27	54
Critical surplus of personnel	6	21
Total percent	100	100
(Total number)*	(131)	(132)

*The numbers of institutions represented here are lower than the population numbers because not all institutions answered the questions.

Table 30

Opinions About Market for Postdoctorate Training and Full-Time Employment in Neuroscience, AY 1981-82
by Organization of Primary Neuroscience Training Program

(in percentages)

Market	Postdoctorate Training	Full-Time Employment
	Type A	
Critical shortage of personnel	0	0
Moderate shortage of personnel	25	0
Market balance	25	25
Moderate surplus of personnel	50	50
Critical surplus of personnel	0	25
Total percent	100	100
(Total number)*	(4)	(4)
	Type B	
Critical shortage of personnel	5	0
Moderate shortage of personnel	33	10
Market balance	38	10
Moderate surplus of personnel	24	70
Critical surplus of personnel	0	10
Total percent	100	100
(Total number)*	(21)	(20)
	Type C	
Critical shortage of personnel	6	0
Moderate shortage of personnel	25	0
Market balance	42	22
Moderate surplus of personnel	22	61
Critical surplus of personnel	6	17
Total percent	100	100
(Total number)	(36)	(36)
	Type D	
Critical shortage of personnel	5	0
Moderate shortage of personnel	16	8
Market balance	43	19
Moderate surplus of personnel	30	52
Critical surplus of personnel	5	21
Total percent	100	100
(Total number)*	(103)	(104)
	Type E	
Critical shortage of personnel	0	0
Moderate shortage of personnel	19	18
Market balance	31	6
Moderate surplus of personnel	50	53
Critical surplus of personnel	0	24
Total percent	100	100
(Total number)*	(16)	(17)

Type A: Department of neuroscience, Ph.D. in neuroscience
Type B: Interdepartmental program, Ph.D. in neuroscience
Type C: Interdepartmental program, Ph.D. in traditional discipline with specialization in neuroscience
Type D: Traditional department, Ph.D. in traditional discipline with specialization in neuroscience
Type E: Other

*The numbers of institutions represented here are lower than the population numbers because not all institutions answered the questions.

BEST AVAILABLE COPY

Appendix A: Survey Instrument

AMERICAN COUNCIL ON EDUCATION
ONE DUPONT CIRCLE
WASHINGTON, D. C. 20036

June 21, 1982

HIGHER EDUCATION PANEL
(202) 833-4757

Dear Higher Education Panel Representative,

Attached is Higher Education Panel Survey #57, "Neuroscience Personnel and Training." Sponsored by the National Science Foundation, its purpose is to clarify some aspects of current neuroscience training and manpower.

Research on the nervous system has grown very rapidly over the past decade with large increases in the number of scientists working in this area. Formal and informal training programs in neuroscience have proliferated in colleges and universities, and nearly 200 neuroscience training programs have been identified. Unfortunately, this explosive growth has not been accompanied by specific information regarding neuroscientists and their training, or the manpower needs and capabilities in the neurosciences. Most neuroscientists, because of the interdisciplinary nature of their research, are based in departments of anatomy, pharmacology, physiology, biochemistry, biology, and psychology; there are only one dozen formal departments of neuroscience. Thus, the status of manpower and training in neuroscience cannot be assessed by simply studying conventional departments.

You will note that this is a somewhat complex questionnaire and will require very specific, substantive knowledge of the discipline to complete. Consequently, instead of asking the HEP representative to determine the most appropriate respondent, the Foundation has requested that a specific individual act as neuroscience coordinator on your campus. At your institution, the Foundation recommends that the survey be forwarded to:

If this person is no longer on your campus or is otherwise unavailable to act as coordinator, please designate an appropriate substitute and let us know whom you select. We have included a preaddressed postcard for this purpose.

Please understand that your institution's response will be protected to the maximum extent permissible by law. As with all our surveys, the data you provide will be reported in summary fashion only and will not be identifiable with your institution. This survey is authorized by the National Science Foundation Act of 1950, as amended. Although you are not required to respond, your cooperation is needed to make the results comprehensive, reliable, and timely.

Please have the completed questionnaire returned to us by July 12, 1982. A preaddressed envelope is enclosed for your convenience. If you have any questions or problems, please do not hesitate to telephone us collect at (202)833-4757.

Sincerely,

Frank J. Atelsek

Frank J. Atelsek
Panel Director

Enclosures

NATIONAL SCIENCE FOUNDATION
WASHINGTON D.C. 20550

June 21, 1982

Dear Neuroscience Coordinator:

We are writing to ask your cooperation with the attached survey which we are sponsoring to clarify some aspects of current neuroscience training and manpower. We at the National Science Foundation have asked the Higher Education Panel, a survey research program operated by the American Council on Education, to conduct this survey for us.

Research on the nervous system has grown rapidly in the past decade, yet there has been no concomitant growth in information about neuroscientists. There are only about twelve formal departments of neuroscience around the country, and many neuroscientists and much training are based in traditional departments of anatomy, biochemistry, biology, pharmacology, physiology, and psychology. Since most of the data relative to training and manpower is compiled on the department level, information relevant to neuroscience training—which cuts across traditional department lines—is not available.

Accurate and specific information on neuroscience is needed by the National Science Foundation both to help determine policy and to evaluate the impact of changes in research and training support. These data will be useful, in addition, to other federal agencies, the Society for Neuroscience, and the federal Interagency Working Group in Neuroscience.

We realize that this is a very difficult questionnaire and several of the items will require a substantial effort. However, we hope you will agree that the goal is worth the effort.

It is especially important that you think carefully about the first question in the survey because it defines the neuroscience program at your institution. The rest of the survey relates to the neuroscience program you define, and we encourage you to be as comprehensive as possible. For example, even if your institution has a department of neuroscience or an interdepartmental program with a doctorate in neuroscience, neuroscience graduate students, postdoctorate trainees, and faculty may be housed in several departments. It is important for the survey to include *all* appropriate persons, not just those associated with a formal neuroscience department or program. If there is a medical school on your campus, be sure to consider its students, faculty, and staff. We ask that you be inclusive rather than exclusive in your responses.

Please feel free to call the Higher Education Panel staff collect at (202) 833-4757 if there are any questions or problems. This survey should be returned by July 12, 1982 to the Higher Education Panel, One Dupont Circle, Suite 829, Washington, D.C. 20036.

Your best efforts will be sincerely appreciated.

Jim Brown

James H. Brown
Division of Behavioral and
Neural Sciences
National Science Foundation

Joe Coulter

Joe Dan Coulter
Education Committee
Society for Neuroscience

AMERICAN COUNCIL ON EDUCATION

OMB #3145-0009
exp. 6/30/84

Higher Education Panel Survey No. 57

NEUROSCIENCE PERSONNEL AND TRAINING

Definitions

Neuroscience: Those subject areas, disciplines and research strategies which have, as a primary goal, the understanding of the structure and function of nervous systems and the role of the nervous system in determining behavior.

Graduate student (full-time): An individual enrolled full-time in a program of study/training leading to a Ph.D. or equivalent. *Exclude* students enrolled solely in a medical program, but *include* students in dual degree programs (e.g., M.D.-Ph.D.)

Postdoctorate trainee: An individual with a doctorate (Ph.D., Sc.D., etc.) *or* with a professional degree (M.D., D.D.S., D.V.M., etc.) who, under *temporary appointment*, devotes full-time to research activities or study, usually for a specified time period.

Nonfaculty research doctorate: A person employed full-time by the department in a professional capacity specifically for research activities who holds a doctorate, who *does not* have a faculty appointment and *is not* a postdoctorate trainee.

Faculty: Individuals with regular, full-time faculty appointments (both tenured and nontenured). Exclude postdoctorate trainees and nonfaculty research doctorates.

1. Indicate the primary administrative/organizational structure that in academic year 1981-82 provides graduate neuroscience training at your institution. If such training is provided by more than one administrative/organizational structure, enter the appropriate codes in the spaces provided.

STRUCTURE *(Enter codes from list opposite.)*	
Primary neuroscience training program	_____
Additional neuroscience training programs (if any)	_____

CODES

A Department of Neuroscience, Ph.D. in neuroscience
B Interdepartmental program, Ph.D. in neuroscience
C Interdepartmental program, Ph.D. in traditional discipline with specialization in neuroscience
D Traditional department, Ph.D. in traditional discipline with specialization in neuroscience
E Other (specify) _____

Please complete the rest of this questionnaire with reference to all graduate neuroscience personnel and training at your institution—i.e., the primary neuroscience program and all additional neuroscience training.

2. As of fall 1981, how many full-time faculty and full-time nonfaculty research doctorates were in your neuroscience program(s)? *Do not* include postdoctorate trainee positions.

NUMBER

_____ All faculty

(_____) Tenured faculty

(_____) Nontenured faculty

_____ Nonfaculty research doctorates

3. How many full-time graduate students, postdoctorate trainees, and faculty were in your neuroscience program(s) in fall 1980 and 1981, and what are your estimates for fall 1982? (Please provide your best estimates if actual counts are not available.)

	GRADUATE STUDENTS	POSTDOCTORATE TRAINEES	FACULTY
Fall 1980	_____	_____	_____
Fall 1981	_____	_____	_____
Fall 1982 (estimate)	_____	_____	_____

This figure should be the same as that reported for all faculty in item 2 above.

4. If any *net changes* (either increases or decreases) occurred between fall 1980 and fall 1982 in the number of graduate students, postdoctorate trainees, or faculty in your neuroscience program(s) (as indicated above in question 3), please indicate for each the *primary factor* that contributed to that change.

PRIMARY FACTOR FOR CHANGE *(Enter codes from list opposite)*	
Graduate students	_____
Postdoctorate trainees	_____
Faculty	_____

CODE

Change in:

A Federal training grant/fellowship support
B Federal research grant/contract support
C Institutional/state support
D Number of applicants
E Quality of applicants
F Professional interest in the field
G Demand for graduates/availability of jobs in the field
H Other (specify) _____
I No net change

5. How many Ph.D.s were awarded in your neuroscience program(s) in academic years 1980-81 and 1981-82, and what is your estimate for academic year 1982-83? (Please provide your best estimates if actual counts are not available.)

	PH.D. RECIPIENTS
Academic Year 1980-81	_____
Academic Year 1981-82	_____
Academic Year 1982-83 (estimate)	_____

6. In fall 1981, how many full-time graduate students and postdoctorate trainees in your neuroscience program(s) were foreign (non-U.S.) citizens on temporary or student visas?

	NUMBER
Foreign graduate students	_____
Foreign postdoctorate trainees	_____

7. Indicate the three major subject areas/disciplines that best characterize the areas of concentration in training and research of graduate students, postdoctorate trainees, and faculty in your neuroscience program(s) within the past five years (since 1977). Rank order the top three areas for each group, with (1) being the area of greatest concentration.

	MAJOR AREAS OF CONCENTRATION *(Enter codes from list below.)*		
Graduate student training	(1) _____	(2) _____	(3) _____
Postdoctorate training/research	(1) _____	(2) _____	(3) _____
Faculty research	(1) _____	(2) _____	(3) _____

CODE

A Anatomy
B Biology
C Biostatistics/mathematics
D Biophysics
E Bioengineering
F Cell biology/microbiology
G Clinical/medical sciences
H Chemistry/biochemistry
I Epidemiology/public health
J Genetics
K Pathology/toxicology
L Pharmacology
M Physiology
N Psychology/behavioral sciences
O Zoology
P Other (specify) _____

8. What was the average or typical number of years of full-time study and training for graduate students and postdoctorate trainees who completed your neuroscience program(s) during academic year 1980-81?

GRADUATE STUDENTS
(Check One)

( ) Three years or less
( ) Four years
( ) Five years
( ) Six years
( ) Seven years
( ) Eight years or more

POSTDOCTORATE TRAINEES
(Check One)

( ) One year or less
( ) Two years
( ) Three years
( ) Four years or more

9. In the past five years (since 1977), has there been a change in the average or typical number of years of full-time study and training for graduate students and postdoctorate trainees in your neuroscience program(s)?

GRADUATE STUDY PERIOD
(Check One)

( ) Decreased
( ) No change
( ) Increased less than one year
( ) Increased one year or more

POSTDOCTORATE TRAINING PERIOD
(Check One)

( ) Decreased
( ) No change
( ) Increased less than one year
( ) Increased one year or more

10. **If an increase has occurred** in the average amount of time either your graduate students or postdoctorate trainees remain in your neuroscience program (as indicated above in question 9), to which primary factor do you attribute the increase(s)?

PRIMARY FACTOR FOR INCREASE
(Enter codes from list opposite.)

Graduate students _____

Postdoctorate trainees _____

CODE

A Lack of postdoctorate training opportunities/full-time jobs in the field
B Expansion of curricula or training program requirements
C Professional need/interest for additional training and specialization
D Availability of stipend/salary support
E Other (specify) _____

11. In fall 1981, how many full-time faculty vacancies (budgeted positions) existed in your neuroscience program(s)?

_____ Faculty vacancies fall 1981

12. Of the faculty employed full-time in fall 1981 in your neuroscience program(s), how many do you expect will retire after spring term 1982 and before fall term 1983 (a one-year span)?

_____ Expected retirements 1982-83

13. From your recent placement experience, how would you characterize the market during academic year 1981-82 for *postdoctorate training* in neuroscience and *full-time employment* in neuroscience following completion of postdoctorate training?

MARKET
(Enter codes from list opposite.)

Postdoctorate training _____

Full-time employment _____

CODE

A Critical shortage of personnel
B Moderate shortage of personnel
C Market balance between personnel and positions
D Moderate surplus of personnel
E Critical surplus of personnel

Thank you for your assistance. Please return this form by **July 12, 1982** to:

Higher Education Panel
American Council on Education
One Dupont Circle, Suite 829
Washington, D.C. 20036

Please keep a copy of this survey for your records.

Person completing form:

Name _____

Dept. _____

Phone _____

If you have any questions or problems, please call the HEP staff collect at (202) 833-4757

Appendix B: Technical Notes

The survey instrument was sent to all colleges and universities that offered doctorate-level programs in the neurosciences: 181 Panel institutions and 7 nonpanel institutions. Thus, unlike most Panel surveys, standard errors are not reported since the data were drawn from the entire population of institutions identified as offering neuroscience training.

Weighting

Data from the 174 responding institutions were statistically adjusted to represent the population of institutions with graduate neuroscience activity.

First, data were imputed for unreported items using cell averages. Then weights were calculated for each cell by dividing the number of institutions in the population by the number of institutions that responded (see table B-1). The resulting weights then were applied to the data provided by each institution, thus raising the respondent data to national estimates.

Table B-1: Stratification Design for Weighting

Cell	Description	Population	Respondents	Weight
01	Public universities	85	79	1.08
02	Private universities	47	40	1.18
03	Public medical schools	25	24	1.04
05	Public nonblack four-year colleges (large)	14	14	1.00
06	Private medical schools	13	13	1.00
07	Private four-year colleges (large)	1	1	1.00
10	Public four-year colleges (small)	1	1	1.00
11	Private four-year colleges (medium)	1	1	1.00
12	Private four-year colleges (small)	1	1	1.00

Response Analysis

Table B-2 compares the 174 respondents with the 14 nonrespondents against several institutional characteristics. The overall response rate was quite high--93 percent--and the rates for different kinds of institutions never fell more than 4 percentage points below that norm.

Higher-than-average response rates were recorded for medical schools (97 percent), four-year colleges (98 percent), and institutions enrolling 1,200-2,500 graduate and first professional students (98 percent).

Lower-than-average response rates were recorded for the largest graduate schools (88 percent) and for private institutions (89 percent).

Table B-2: Comparison of Respondents and Nonrespondents

Characteristic	Respondents (N=174)	Nonrespondents (N=14)	Response Rate
Total	100.0	100.0	92.6
Control			
Public	67.8	50.0	94.4
Private	32.2	50.0	88.9
Type			
University	68.4	92.9	90.2
Four-year college	31.6	7.1	98.2
Carnegie Class			
Research university	44.8	57.2	90.7
Doctoral-granting	25.3	28.6	91.7
Comprehensive	7.5	7.1	92.9
Medical school	20.7	7.1	97.3
All other	1.7	0.0	100.0
Census Region			
East	26.4	21.4	93.6
Midwest	22.4	28.6	90.7
South	33.9	28.6	93.7
West	17.2	21.4	90.9
Graduate & First Professional Enrollment			
Less than 1,200	24.7	14.3	95.6
1,200-2,500	23.0	7.1	97.6
2,501-4,500	25.9	35.7	90.0
4,501 or more	26.4	42.9	88.5

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